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ABSTRACT

These proceedings contain edited versions of 14 papers on government information and its relation to the library and information community that were presented at a state-of-the-art institute sponsored by the Special Library Association (SLA). Following a foreword by Steve Bell of ABC News and an introduction by David R. Bender of the SLA, papers include: (1) "Federal Information Practices" (Robert Gellman); (2) "Keeping the Citizens Uninformed" (Donna Demac); (3) "Government Information--An Underutilized Resource" (Marilyn G. Mason); (4) "The Ethics of Government Efficiency" (Reid Holloway); (5) "Privatization of Information" (Ken Allen); (6) "The Care of Intellectual Property in an Electronic Society" (Marybeth Peters); (7) "The Impact of Technology on Access to Information" (Mary J. Culnan); (8) "Government Information Dissemination Policy" (J. Timothy Sprehe); (9) "Bringing Information to the People" (Elizabeth Young); (10) "Information Management and Productivity" (Donald A. Marchand); (11) "Mobilizing Knowledge for Better Decision-Making in the Information Age" (David Pearce Snyder); (12) "Factors Related to a National Information Policy" (Melvin S. Day); (13) "Management of Information Technology in the Federal Sector" (Vincent M. DeSanti); and (14) "Recent Information Studies of OTA (Office of Technology Assessment)" (Priscilla Regan). Concluding remarks by Steven Goldspiel of the Disclosure Information Group complete the collection. (KM)

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GOVERNMENT INFORMATION: An Endangered Resource of the Electronic Age

The First Annual State-of-the-Art Institute

Special Libraries Association
Washington, D.C.

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GOVERNMENT INFORMATION:
An Endangered Resource of the Electronic Age

Papers Presented
at
The First Annual
State-of-the-Art Institute
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1986

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TABLE OF CONTENTS

Editor's Note v

Foreword
STEVE BELL, ABC News, Washington, D.C. vii

Introduction
DR. DAVID R. BENDER, Executive Director, Special Libraries Association ix

"Federal Information Practices"
ROBERT GELLMAN, Counsel, U.S. House of Representatives, House Subcommittee on Government Information, Justice, and Agriculture, Washington, D.C. 1

"Keeping the Citizens Uninformed"
DONNA DEMAC, Communications Lawyer and Instructor, New York University's Interactive Telecommunications Program, New York, N.Y. 25

"Government Information: An Underutilized Resource"
MARILYN G. MASON, Director, Cleveland Public Library, Cleveland, Ohio 42

"The Ethics of Government Efficiency"
REID HOLLOWAY, Senior Corporate Writer, W.R. Grace and Company, New York, N.Y. 58

"Privatization of Information"
KEN ALLEN, Vice President of Government Relations, Information Industry Association, Washington, D.C. 80

"The Care of Intellectual Property in an Electronic Society"
MARYBETH PETERS, Policy Planning Adviser to the Register of Copyrights, Library of Congress, Washington, D.C. 102

"The Impact of Technology on Access to Information"
MARY J. CULNAN, Associate Professor, Kogod College of Business, American University, Washington, D.C. 115

"Government Information Dissemination Policy"
J. TIMOTHY SPREHE, Senior Policy Analyst, Information Policy Branch, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 125

"Bringing Information to the People"
ELIZABETH YOUNG, Vice President,
Business Development, COMSAT,
Clarksburg, Md. 138

"Information Management and Productivity"
DONALD A. MARCHAND, Director, Institute
of Information Management, Technology and
Policy, College of Business Administration,
University of South Carolina, Columbia, S.C. 158

"Mobilizing Knowledge for Better Decision-Making
in the Information Age"
DAVID PEARCE SNYDER, Consulting Futurist,
The Snyder Family Enterprise, Bethesda, Md. 183

"Factors Related to a National Information Policy"
MELVIN S. DAY, Senior Vice President,
Herner & Company, Arlington, Va. 211

"Management of Information Technology in the
Federal Sector"
VINCENT M. DeSANTI, Group Director in the
U.S. General Accounting Office's Information
Management Technology Division, Washington, D.C. 229

"Recent Information Studies of OTA"
PRISCILLA REGAN, Analyst, Communications and
Information Technology Program, Congressional
Office of Technology Assessment, Washington, D.C. 242

"Conclusion"
STEVEN GOLDSPIEL, Executive Vice President
of Marketing and Sales, Disclosure
Information Group, Bethesda, Md. 253

EDITOR'S NOTE

The ideas and opinions expressed in this publication are not necessarily those of the Special Libraries Association nor of the association/affiliations represented by the authors.

The entire State-of-the-Art Institute was transcribed. SLA chose not to publish a word-for-word transcript of the meetings. Rather, we are publishing the edited versions of each presentation. Discussion sessions that followed presentations are not included. These were mainly spontaneous and involved expanding issues or statements presented in papers. Unfortunately the laughter, the asides, the interactions among people and personalities that bring an Institute to life are thus omitted. Readers who want additional information can consult the participants for more detail. A complete transcription of the Institute will become a part of SLA's archives.

Perhaps the major agreement among the participants was that we should all get involved and concerned about government information. It is an endangered resource of the electronic age.

Bill Johnson
Editor, Non-Serial Publications
Special Libraries Association

FOREWORD

The news media will long remember Ronald Reagan as the president with the least command of substantive detail of any American president. Yet he has been dubbed the "great communicator" and is acknowledged as an extraordinary practitioner of the "Art of the Presidency."

The Reagan White House has been remarkably successful in controlling information. Access to information has tightened, generally, on the grounds of national security. White House staff regularly meet to review announcements and to create news in an attempt to orchestrate the flow of information. Requests for information under the Freedom of Information Act are backlogged at many federal agencies.

In an effort to destabilize Libya's Col. Ghadaffy, at least some White House staffers apparently embarked on a disinformation campaign which, when discovered, jeopardized President Reagan's credibility.

Although he has been one of our most popular presidents, Ronald Reagan is often in an adversarial position with the news media. Fortunately, the adversarial role is healthy and necessary and insures that reporters check news leads and the information in news stories.

Information professionals and the news media play key roles in assuring the accuracy and flow of information. Just as President Reagan uses his communications skills to

lead the country, so must each of you use your abilities to provide information for the benefit of your organizations and society at large.

Steve Bell

ABC News

Washington, D.C.

INTRODUCTION

From the planning stages and throughout SLA's State-of-the-Art Institute, questions arose as to the title, "Government Information: An Endangered Resource of the Electronic Age." People generally were intrigued by the title or strongly disagreed with the premise.

The purpose of the Institute was to stimulate thought on government information as it relates to the library and information community. The Institute and these proceedings are a testament that the Institute accomplished that goal.

But why the title? Government agencies, like the private sector, have become increasingly dependent upon modern computer and telecommunications technology to establish databases containing information needed by information professionals. Yet, government information is endangered for any number of reasons. Technology as it is applied within some government agencies may simply block access, either by cost or by equipment.

To a growing degree, government's changing philosophy pertaining to the cost of generating information endangers its future availability. Frequently, deficit reduction has slashed funds supporting research and dissemination of information. In other cases, information must be sold on a cost-recovery basis which may result in doubling and tripling the cost to the end-user. Finally, for a variety of political reasons, we have

witnessed further restrictions to accessing information on the grounds of national security.

This book of readings, excerpted from SLA's first State-of-the-Art Institute, presents a wide variety of perspectives on government information: its state of being, the impact technology plays in providing information to end-users, and a glimpse at the future implications of information technology.

In the following pages, diverse opinions on government information emerge. Speakers representing government agencies scoff at the idea that government information is becoming less available and point to new technology as a guarantee of access to government-funded information. A university professor suggests that there is no such thing as government information, but rather products and markets. Other speakers assert that technology is neutral and that it acts only as a delivery system.

These differing points of view gave strength to the Institute. During the three-day conference, speakers and participants discussed numerous issues concerning government information and six general themes evolved from the Institute:

-Government is shifting its information policies.
-Public/private sector partnerships are a viable alternative ensuring the accessibility of government

information.

-Legislation does not keep pace with technology.

-New technology is having an impact on the workplace. The marketplace is flooded with innovations to electronic technology.

-Information malpractice/liability is a growing concern to information professionals.

-Information has global impact.

In our rapidly changing society, information has become one of our greatest resources. The federal government tells us that over 15 billion dollars were invested in information technology in 1986. Unfortunately, there is no national information policy protecting the government's huge investment in information. Instead, a conglomeration of laws -- over 200 since 1977 -- regulate government information policy.

From a public or end-user viewpoint, both the Copyright and Freedom of Information Acts were designed to protect access to publicly-funded information. Unfortunately, concerns are mounting that these laws are, and can be, circumvented.

Other threats to access exist. Several presentations point to technology as the culprit. The technology that was developed to open new channels of access often prevents

access. In some cases incompatible equipment prevents the user from accessing information. Other times the sheer costs associated with technology preclude use of government information.

As you read each presentation, keep in mind the perspective of the speaker. I encourage you to read with a critical eye. The Institute and these proceedings were designed to prompt continuing thought on the implications of information in the electronic age.

Finally, I recommend that you consider the ideas and concepts brought forth throughout this publication as they apply to your working situation. I am certain that you will agree that government information plays a monumental role in our professional and our daily lives -- a role that will continue to expand with our dynamic technological advances.

David R. Bender, Ph.D.
Executive Director
Special Libraries Association

"FEDERAL INFORMATION PRACTICES"

BY ROBERT GELLMAN

By way of introduction, I would like to say a word about the work of the subcommittee. In any city other than Washington, a subcommittee with jurisdiction over government information, justice, and agriculture, would be a strange duck but in Washington, it is quite normal.

The subcommittee's jurisdiction over information issues is quite broad and includes such things as the Freedom of Information Act, the Privacy Act, the Sunshine Act, the National Archives, the Post Office, and the Federal Communications Commission. It is a broad range of information policy and communications issues. The subcommittee's jurisdiction is primarily an oversight jurisdiction.

I have to say that my remarks are my own and do not represent necessarily the views of the subcommittee. So if I say "we," that means "me."

This morning I want to talk about the possibility of increased government control over information through new information technology. I am going to be focusing primarily on electronic information systems, those large computer-based data bases that allow for greater use and greater manipulation of information.

I would like to start out by referring to an article that appeared in the "Washington Post" some months ago to

illustrate my point about technology and information. The article was about Russian policies with respect to copying machines, Xerox machines.

It seems that there are very few copying machines in Russia. The article described one agency where, if you wanted to make a copy of something, you needed to get written permission from the director of security of the agency and it took two to three days to get permission.

The Russians have obviously learned that one way to control information is by controlling technology. Think for a minute how your operations would be different if, in order to make a copy of a document, you had to go talk to the one person in your agency or organization whom you did not want to talk to under any circumstances.

The Xerox machine was the information technology of the 1950's and 1960's. Electronic information systems are the information technology of the 1980's. Whoever controls the technology has the ability to control the information that is in the system.

Let me give you an example of an electronic information system that is the biggest and most ambitious one being considered at the federal level. It is the Securities and Exchange Commission's EDGAR system.

EDGAR stands for Electronic Data Gathering, Analysis, and Retrieval. Every year for many years the SEC has collected

literally millions of pages of documents, prospectuses, registrations, annual reports, 10-K's, 8-K's; a whole variety of financial documents for which the SEC collects and makes public.

The SEC proposes to completely automate that process through the EDGAR system. It wants to collect the information electronically, store it electronically, maintain it, retrieve it and disseminate it -- all electronically.

This is a very ambitious undertaking. The SEC has been running a pilot system for some time and they are trying to work toward full implementation of the system.

Another large electronic information system operated by the National Library of Medicine is called MEDLARS. This is a data base containing bibliographic information and summaries of articles pertaining to medical research. There are actually many different data bases in MEDLARS. That just gives you a sense of it.

NLM's system has been in operation for some years. It was one of the first large data bases, and it has been in operation, I think, since 1965.

The subcommittee's interest in this subject goes back to hearings that were held in 1985. The hearings were entitled "Electronic Collection and Dissemination of Information by Federal Agencies." The report that was mentioned by Mr. Spaulding is House Report 99-560.

In the days before Gramm-Rudman, I would tell you to contact the subcommittee to get a copy of the report. We can no longer do that but the report is available from the Senate document room or from the Government Printing Office. The document room, I believe, will give you a copy for free as long as they have it, and the Government Printing Office gets $2.25 for it.

The scope of the subcommittee's inquiry at the hearings included information systems with two characteristics. First, the information had to be maintained in electronic format with remote access capability. This includes your standard, remotely accessed, data base of which there are literally hundreds of examples in the private sector and actually quite a few in the federal sector as well.

The second characteristic is that the information in the system had to be public information. The government maintains lots of different kinds of information. Some of it is public; some of it is not. Some information may be personal. Some may be proprietary. Some may be classified.

The Subcommittee only looked at systems containing information that is clearly public. The SEC is a good example. All of the registration statements that it gets are public. In the National Library of Medicine system, all of the information is public information.

The approach to the subject simplifies the task of

trying to isolate the policy problems that result from the new technology.

The Subcommittee also considered during the hearings a variety of other data bases that are either in place or being planned. The Census Bureau operates a fairly simple report dissemination system called CENDATA. The Agriculture Department has a system called EDI, Electronic Dissemination of Information. The Federal Maritime Commission is in the process of automating its ocean tariff files.

The Food and Drug Administration is one of a number of agencies that uses the Fed News service of Dialcom to disseminate press releases and other agency documents. The Patent and Trademark Office is in the process of automating both the trademark and patent side of its activities. Other agencies with some activity in this area include the Bureau of Labor Statistics, NASA, the Federal Election Commission, the Interior Department, the White House, and others.

Electronic information systems have the potential to change the way that federal data is made available to the public. They can make government more efficient. They can make data more accessible and more usable both to those inside the government and those outside the government.

In general, electronic information systems are very good things, and there has been no opposition to the basic idea of electronic information systems either from the

subcommittee or from anyone else we have talked to.

Even among the severest critics, for example, of the SEC, no one actually opposes the creation of EDGAR. The question is, how do you do it. How do you proceed with the new technology?

I want to identify three areas of concern that are reflected in the subcommittee's work. The first one I call "control of data." There is a potential for agencies to acquire a kind of de facto monopoly control over data that is maintained in electronic information systems.

This is a major concern of the subcommittee; this is perhaps the major concern of the subcommittee. Information monopolies are bad and government information monopolies are worse.

How might an agency use monopoly power? Well, for example, an agency might exercise political control over data dissemination by rationing services. Suppose that an agency operates a computer system and that there is more demand for use of the system than the system can support. How do you ration services?

There are many different ways of doing it. In the private sector, the traditional way is to raise the price until you longer have an excess number of customers. The government doesn't usually operate that way, and there might be other criteria that might be applied, some of them political.

Suppose a particular agency decided that friends of the agency could use the system, but critics could not. Republicans could use it, but Democrats could not. Contributors could use it, but others could not.

There are a million different ways of dividing up the world, and any criteria using political standards are obviously obnoxious.

In another use of monopoly power, an agency might use the control over data to pressure contractors into providing free services to an agency and, in fact, this has almost already happened.

At the SEC when planning began for EDGAR -- and EDGAR is a very large and very expensive undertaking, it is estimated that it will cost between $35 and $100 million dollars or perhaps even more, no one is quite sure -- the SEC originally said, "We want a contractor to come in and set up this system. We want them to spend millions of dollars in developing the software and purchasing the hardware. We want them to provide the SEC itself with millions of dollars annually in services and hundreds of computer terminals, and we want this contractor to do it all for free."

The SEC originally proposed to pay nothing for the system. If the SEC wasn't going to pay for it, somebody else had to, and that somebody else they had in mind was public users of the same information system. Needless to say, that

was not a very practical alternative. The SEC soon learned that they could not find a contractor who was willing to pay all the expenses on behalf of the SEC.

Another way that an agency might use monopoly power is to charge high fees for access to data that is already public and that has already been paid for by the taxpayers. An example can be found in the MEDLARS system.

If you wish to use the MEDLARS system, there are two basic ways. You can go to MEDLARS and you can pay them so much an hour for use of the system with using a remote access terminal. The charges for that service are based largely on the cost of providing the service.

There is a second way, however, that the information in the system is made available. You can go and actually purchase in bulk the tapes which contain all of the data base in the MEDLARS system. If you want to do this, you have to come and pay the National Library of Medicine $15,000.00 a year.

That is not necessarily so bad but it doesn't stop there. In order to get the tapes, you have to enter into what is called a "licensing agreement." The licensing agreement says, first of all, you may not make copies of the tapes and give them to other people. Second, when you use the NLM's tape on your computer, and you use your own computer to search that tape, you have to pay NLM three or four dollars per hour

and so much a citation found.

In other words, they are selling information for value, for what the information may be worth. This is a very disturbing trend.

Why has this not happened very much in the past? Why is electronic information technology different than previous technology?

Well, the answer is actually quite simple. In the past anyone with a xerox machine or printing press could duplicate government information. It is quite common to see people take a government document and re-print it privately. The last example I saw was the report of the Attorney General's Commission on Pornography.

I believe, if I remember the numbers correctly, that GPO sold the document for about $35.00. Someone privately printed it for $9.95. This is perfectly legal. They could sell it for $9.95. They could sell it for $109.95. They can do anything they want with it. They can publish it in whole or in part. There is no restriction.

With an electronic information system, it is not so simple. The systems are expensive. They require a lot of hardware and software which is, in fact, readily available but it is still very expensive. Just putting the data in electronic form is tremendously expensive.

For example, if you had to take all of the millions

of pages of SEC documents and keypunch them, you couldn't do it. The expense would be prohibitive. When the government sets up a system and automates the data, it becomes the only game in town.

As a practical matter, no one else can re-duplicate that system. It may be that in a few years when scanning technology gets better, it will be possible for this kind of information to be scanned and put in a data base. But that will probably be some time off for many kinds of data systems and it, too, may be expensive.

What is it that has prevented agencies from exercising monopoly control over data in the past? There are two laws that have prevented agencies from doing this.

The first one is the Copyright Act. The Copyright Act says that the federal government cannot copyright information. This is very important. This law means that the government cannot control its own data. That is a deliberate policy decision to allow government data to be freely disseminated, freely distributed, and freely reproduced.

The second law that prevents agencies from controlling data is the Freedom of Information Act. The FOIA establishes a mechanism that allows people to come forward and ask the government for information. Any information that is not sensitive or restricted in some way must be given out at a relatively low cost although that happens to be changing now.

The fee structure of the FOIA was just amended as part of the Omnibus Drug Act that just passed the Congress this weekend.

To return to the MEDLARS system, I believe that NLM is avoiding the intent of both of these laws in the way it is making its data tapes available. It is restricting use of and access to its data by effectively copyrighting it.

It doesn't have a formal copyright. It can't put a little "c" on the document or on the tapes but what it is doing is effectively the same thing. It is saying, "We will give you a copy of the tape but you cannot re-disseminate it." That is what you could do if you had a copyright over the information.

NLM is also avoiding the Freedom of Information Act on the basis of an old case which lets them do it. Many people think the court's opinion is incorrect.

This is a very dangerous precedent. Suppose other agencies began to do the same thing. Suppose, for example, that the Census Bureau took all of its data tapes and began to exercise the same kind of control. Right now there are dozens, hundreds perhaps, of companies that get information from Census, repackage it, add value to it and sell it to their clients.

Suppose the Census Bureau said, "We want to control our data. If you want to use it, you have to pay us royalties. You have to pay us percentage of your gross, or a

percentage of your net, when you sell our data." If it followed the NLM's precedent, the Census Bureau could take its data -- which has been public for a long time -- and essentially convert it to Agency use.

Other agencies, at least in principle, might do the same thing. How far you could go with this depends on how valuable your data is. Census Bureau data is pretty valuable to a lot of people. Federal Maritime Commission ocean tariffs obviously would have a much narrower market.

I think it is clear that there are pressures for increased control over information that is maintained in electronic information systems. The pressures are largely a consequence of the expense of the systems.

Agencies are looking for revenue sources since appropriated funds are hard to get these days. This makes user fees look very attractive, but the copyright laws -- the prohibition against government copyright -- effectively prevent agencies from trying to sell data at a high price.

I can illustrate this very nicely with a simple example. The notes for my speech are four pages long and are un-copyrighted. If I attempted to sell a copy to anyone, say at $100.00 per set, I would have one customer. The first customer would turn around and sell a copy for $50.00 to the next person and so on down the chain until, if there were enough people interested in having a copy, it would sell for

11-cents, 10-cents per page for the copying fee and one-cent per page profit.

That is what happens with un-copyrighted data. You can't sell it at a high price. You can only sell it at the cost of dissemination. That is a key consequence of the copyright law, and that is what causes some tension in this area because agencies are looking to find a way around that. Otherwise, they can't extract any revenue from the system.

The second area of concern involves paying for government use of services. Another approach to getting an electronic information system started is to find somebody who will give you something for nothing. It is a nice idea but it creates a separate set of problems.

The most obvious one is you can't get something for nothing. If the data base has no commercial value because it is not copyrighted, then you can't get much value for it unless you find some other way to restrict access to it.

The EDGAR system learned this lesson the hard way. As I mentioned, the SEC originally proposed that all of the hardware, and software, and services be made available to the SEC without charge.

When the SEC realized that this wasn't going to work, it offered to put up half a million dollars a year for the services. That didn't work.

Next, the SEC offered five million dollars a year

for seven years. That is $35 million dollars, a long way from a system that wasn't going to cost the government anything at all. Even the $35 million hasn't been enough.

There is an RFP out on the streets for EDGAR. Bids were originally due sometime in September, but the SEC found it advisable to extend the period. It is rumored that the reason for the delay is that the SEC is working on reformulating the RFP was because no one wanted to bid on it.

There are some elements of the system that the SEC still wants the contractor to pay for but for which there are no revenues attached. The contractor has no way to make a profit, and the reason is that the SEC data base is not copyrighted.

To its credit, the SEC has done a good job in not trying to impose restrictions on the data base in order to generate revenue. The consequence is that the SEC will have to pay its own way.

Another way that an agency might try to obtain services for free is illustrated by something the Patent and Trademark Office did. PTO had a set of data that it needed to be automated. PTO entered into what it called an "exchange agreement" with some private companies.

PTO found a contractor -- someone who was already in the business of marketing trademark information -- who was willing to convert the data to electronic format. PTO received

a copy and the contractor kept a copy. No cash was involved.

Why would a contractor agree to do that? The catch was that the contractor would have the only copy of the data. The Patent and Trademark Office would have a copy, but it agreed not to make a copy of the electronic data available to anyone. In fact, the agreement prohibited PTO from making an electronic copy of the tape available under the Freedom of Information Act, a restriction of dubious legality. The Patent and Trademark Office did this in order to save cash, and the contractor did it because it was able to limit competition.

I think this example illustrates the Patent and Trademark Office's fundamentally flawed sense of priorities. The first priority for any agency maintaining an information system is to maintain public access to that system. That requirement must be met fully, clearly, and completely before you pass on to other priorities that an agency might have.

The exchange agreements at the Patent and Trademark Office sort of blew up in the agency's face. It led to some legislation which also just passed in the last few days restricting the Patent and Trademark Office's ability to play games in this area. The controversy over the agreements contributed to the pressure that forced the legislation through the Congress.

Another aspect of operating without appropriated funds or without a congressional authorization is that there is no direct input from Capitol Hill. This by itself is not such a terrible thing -- although those on the Hill have a different point of view -- but it actually turns out to be somewhat important to everybody.

When the SEC proposed to do a variety of things with EDGAR, there were people out there in the real world who didn't like the plans. Some of these people went to the SEC, but the SEC wouldn't listen. The next stop was Capitol Hill. The committees with jurisdiction over the SEC have a way of putting pressure on an agency to do the right thing. Congressional oversight serves as a very useful check on agency action.

The third issue that I want to talk about is competition with the private sector. Electronic information systems offer agencies the capability to establish or expand the offering of information services to the public. This can be a good thing, but it raises questions of competition with the private sector.

The private sector information industry is growing by leaps and bounds. You are all more familiar with that than I am. Avoiding government competition with the private sector is a reasonable goal, but it should not be an agency's first priority, especially for an electronic information system.

The first question with all electronic information systems is, "What is the government's responsibility to make data accessible and will this system meet that responsibility competition or not?" Competition with the private sector cannot be avoided entirely.

An agency must fulfill its statutory mission and many agencies, perhaps most agencies, have specific statutory requirements to make information available.

Some agencies primarily exist only to collect information and make it available. Two of the obvious examples are the Census Bureau and the Securities and Exchange Commission whose statute provides that information must be collected and made public by the SEC. Public disclosure of information is the premise on which our securities markets operates these days.

Once public access has been provided for, it is perfectly reasonable to allow the private sector a chance to compete, and there are several different models currently available as to how to do this.

The SEC proposes to hire a contractor to operate its information service. This is one way of giving the private sector a piece of the business. The contractor will be required to make the information available to all other users at a price that the SEC proposes to regulate. It is my contention that they don't have to regulate their price

because if the data is not copyrighted and can be freely transferred from one person to another, the market will keep the price at approximately the cost of dissemination.

So that is a way that a private contractor can run an information system and others can have access to the data in a reasonable way.

The Food and Drug Administration's use of Dialcom's public bulletin board service is another way that the government can make information available in electronic form, while allowing public users to acquire the data by purchasing information services from the private sector.

The private sector is not able in that circumstance to sell the data for value. What they are selling effectively are computer services and communications services, but they are not getting a price for the information itself.

The Agriculture Department's Electronic Dissemination of Information system has another way of using a contractor. The Agriculture Department's contractor essentially operates as a wholesaler. The contractor is prohibited from offering retail services, but it must provide information to other information wholesalers.

Effectively, the contractor is required to act in the way that the agency would act if it operated the system itself. There is a contrast between that system where the agency contractor is prohibited from offering retail services,

and the SEC's proposal where the contractor will be one of many companies offering retail services.

The key element of all of these arrangements and the thing that makes them all okay is that there are no monopoly controls over information either by the agency itself or by the private contractors.

When government is in the information business, it has an obligation to compete fairly. It is hard to say what fair competition means in this context. It is a very complicated situation, but I think one thing that it does mean is that the government shouldn't go out of its way to offer services that are not essential. Let me give you an example.

Any electronic information system can, at virtually no additional expense, provide an electronic mail service between users of the system. There is no reason for an agency to offer such a service. There are private electronic mail services available, and there is no agency that has the statutory responsibility to provide such services. It might be reasonable for an agency to allow users of the system to communicate with the agency by using the system's electronic mail capabilities, but there is no reason for an agency to allow users to communicate with each other. If there is a demand for that service, the private sector should be allowed to fill it.

The private sector should also be allowed to provide

non-essential value-added services. Using the SEC as an example, when EDGAR disseminates financial filings, the system must provide a reasonable level of services along with the system. You can't just create an electronic page turner whereby a user sits at a terminal and turns pages one at a time in order to find something. That is ignoring the capability of the technology.

It is perfectly reasonable for the SEC to make these terminals available and allow users to search for data in the way that people search computer data bases. For example, a user can ask for all documents that contain the words "stocks," "bonds," "television" and "radio." That is perfectly reasonable.

But it is not necessarily so reasonable for the SEC to offer a service which would allow investors to identify all stocks selling between $10.00 dollars and $20.00 per share with a price earnings ratio of eight and a yield of 5.7-percent. That service is not part of the SEC's mission. That is a kind of service that should be left to the private sector to offer. I am sure there will be many private sector companies that will do so.

How should people react to the growing use of this technology by the federal government? I have different advice depending on whether you happen to be a federal agency or whether you happen to be a user of an information service

offered by a federal agency.

Let me say that many of these problems are coming up at the state government level as well. It is a little bit more complicated there because the copyright laws are not as clear, and state governments may be freer to copyright data. Copyright means that you can restrict data and it means that you can generate revenue out of data in a way that the federal government is clearly prohibited from doing.

For an agency, my advice is to announce plans for electronic information systems as early as possible. Provide everybody with advanced notice. Actively seek out the community of users, filers, contractors, competitors, and anybody else with an interest in your information system. Don't wait for them to find you. Form an advisory committee; get advice; tell the Congress; tell anybody who will listen what you are doing.

The SEC worked on its system for many years. But it was only a few weeks before it actually issued the first RFP that a meeting was held with users. That is much too late. Many of the users didn't realize what they were doing or didn't realize how it impacted on them. That is why I say that agencies should be very active in reaching out to users.

For those interested in setting up a system, I suggest that you keep a very close eye on what happens at the SEC. The EDGAR system is filled with technical, policy,

financial and political problems. How those get resolved will be very instructive for everybody.

For users of information systems my suggestions are very similar. Keep your eye on the agencies. Find out if they are considering automation. Don't expect the agency to tell you, although some of them will. The Federal Maritime Commission, at a very early stage in its consideration, set up an advisory committee.

The Department of Transportation is looking to automate some airline information, and it put a notice in the Federal Register very early. I believe that they will be actively speaking to people in the affected industry including users in order to find out what their needs are.

But don't rely on the agency to do it because it might not do it. You have to be aggressive in guarding your own interest. You should insist on getting involved in the planning. You have to identify your own needs and how these new electronic systems will affect your operations.

One of the issues floating around the SEC involves a transition from paper to electronic documents. There are many people now that rely on paper or microfiche SEC documents. They have large libraries established in order to collect and make these documents available to users.

If you just flip a switch one day and move from paper documents to electronic documents, it obviously creates

problems for those people that have been using paper documents only.

You have to allow for a reasonable transition and that is one of the issues that is being fought out with the SEC system. How do you go from here to there and how do you allow everybody else to go from here to there without creating problems?

If users wait until the end of the planning process or until the systems are being implemented to identify their own needs and make their voices heard, it will be too late. I suggest that where there are identified users, if the Agency doesn't set up an advisory committee, form a users group.

You may want to do that even if there is an advisory committee. You have to talk to each other, talk to the agencies, talk to anyone else who shows an interest.

Let me conclude by going back to that article I talked about about Soviet duplication policies. I mentioned that story not to suggest that electronic information systems are a forerunner of totalitarian government in any way. I am not trying to suggest that they are a tool of the devil.

I don't think there is any way that the federal government will control electronic information in the way that the Russians are controlling copying machines. But I think we all need to keep an eye on the implementation of electronic information systems in order to make sure that the technology

is not misused by the government to increase agency control over public information.

"KEEPING THE CITIZENS UNINFORMED"

BY DONNA DEMAC

Over the weekend I saw a movie called "The Name of the Rose," which raised several of the themes that I want to cover this morning. In it, Sean Connery goes from fighting the Russians to fighting the censors.

The movie takes place in a 14th-century monastery in which there is a library that has been put off limits to all but two people in order to prevent access to a text that is said or is thought to lead to blasphemous actions. It is Book 2 of Aristotle's Poetics about comedy. The monk in charge of the monastery is certain that this will lead people to do all kinds of wild and unruly things.

It is a murder mystery, which is the least of our concerns this morning, but it means that in the movie there are some very horrible things that take place. Several things become apparent about censorship in this monastery. First, that the censor does not appreciate the value of the book, the value of the material; second, that he is not really interested in the book itself but in controlling access and in controlling the behavior of those who might gain access to the material. The control factor very quickly assumes overriding importance and, over time, leads to reckless action. For example, the monk librarian puts arsenic on the pages of this book so that anybody who touches it will die.

Since 1980, there have been numerous government policies which have made information less accessible and policies which have treated information as a controlled substance, something to be quarantined. For the most part, these actions have been justified on the grounds of national security, on the one hand, or on the grounds of economy and efficiency, on the other. I would like to look at examples in each of these two areas and show you how the patterns which I described in "The Name of the Rose" have emerged in our own society.

This, of course, is not the first time that the Federal Government has influenced the handling of information, but the issues have become far more complex in an age of very large budget reductions and of an ideological commitment to deregulation. In fact, one of the big questions, I would think, in 1986 is the extent to which deregulation has created information gaps.

Budget reductions have caused cutbacks in research and in the production of statistics. We don't know all of the particulars about this, but it is common sense that as you cut programs across the board which depended very much on the gathering and dissemination of information and when this is carried out by those who themselves do not appreciate the value of that information, that over time we are going to face serious information gaps.

For example, between 1980 and 1984 at the Environmental Protection Agency, funding for research with regard to air quality declined $30 million; with regard to water quality, $60 million; with regard to toxic substances, approximately $30 million. At the end of 1985, a study showed that in the last five years, there had been 7000 accidents involving toxic substances, with some 1500 injuries.

This agency has been one of those most targeted by the Office of Management and Budget for big budget reductions, and itself has shown very little interest in improving or expanding its programs in any of these areas. Consequently, the EPA is in constant battle with the oversight committees in Congress.

Another example. In January of 1986, OMB disapproved a study proposed by the National Institute for Mental Health to assess the impact of Federal budget cuts on patients' use of mental health services. OMB's reason for this was that there was no point to the study since the administration had made it patently clear it had no intention of expanding services in this area, whatever such a study showed.

There are many, many examples. I have been tracking this since 1981. The pattern is very clear. It is one cutback after another, with little attempt to go back and assess the consequences. If you are going to carry out an experiment, don't we need to know what the consequences of

that experiment have been? At the present time we have too little information about the actual human and economic consequences of the deregulatory sweep of the early 1980s.

Paperwork reduction has also put valuable information off limits. This is a bland-sounding means of eliminating information and yet a very serious action, which is not to say I am against getting rid of clutter and redundant material. When the Paper Reduction Act of 1980 was passed by Congress, the intention was to streamline government paperwork functions, but the way in which it has been implemented is tainted with the same reckless ideological fervor that we can see in other areas.

As a communications lawyer, I am most familiar with what has been done at the Federal Communications Commission. I have worked with community groups interested in contesting broadcast station license renewals. Up until 1982-83, the best way of getting information about a station's performance was through the program log that was submitted annually to the FCC.

With deregulation, there is no longer a requirement to turn that log in. Moreover, ostensibly to eliminate unnecessary paperwork, the Commission reduced the size of the renewal license from approximately 14 pages to the size of a post card. The station need only indicate that it is in compliance with existing technical and legal requirements.

There are many other examples. Again with regard to the FCC, it is no longer making available copies of notices of proceedings to groups which might want to participate. They must go and purchase those documents from a commercial supplier which charges steep fees. For a media corporation the price of FCC documents is no problem. For a community organization, it is very difficult, as it adds up the cost of telephone calling, purchasing material, and so forth.

But paperwork reduction is a very slippery item. In several of his State of the Union messages, the President has very proudly boasted of the elimination of several hundred million hours of paperwork. How do you measure that? What does that include? Paperwork in what areas? Attention to detail would be of some benefit here.

We know that a quarter of all government publications that existed in 1980 had been eliminated by the beginning of 1986. We know that several agencies are no longer providing information of value to both the private and public sector and, I would have thought, to the agencies themselves. For example, the Department of Agriculture is no longer issuing crop reports. The Census Bureau has cut back a number of its statistical series.

I think we need to ask the question how have these decisions been made? Are they the product of careful analysis of the value of this information? Are those who are

responsible for making cutbacks in statistical series aware of the importance of quality over time, of the various requirements for maintaining the quality of a data base?

If you read David Stockman's book, THE TRIUMPH OF POLITICS, the answer to this question becomes rather disturbing. Dealing specifically with statistics, there is a precious passage, on page 123, where Stockman describes his own handling of statistics with regard to the national budget, and admits that he is playing games. He says, "I had already casually moved the target date for a balanced budget from 1983, which Reagan promised during the campaign, to 1984. There hadn't been so much as a 'What's That, Again?' from anyone in the White House, but then everyone's nose was so deep in paper, they simply hadn't noticed.

"But that was merely a straw in the wind compared to what would come next. I soon became a veritable incubator of shortcuts, schemes and devices to overcome the truth now upon us, that the budget gap couldn't be closed except by a dictator. The more I flopped and staggered around, however, the more they went along. I could have been wearing a sandwich board saying 'Stop Me, I'm Dangerous.' Even then, they might not have done so.

"Bookkeeping invention thus begun its wondrous works. We invented the magic asterisk. If we couldn't find the savings in time, and we couldn't, we would issue an IOU. We

would call it 'future savings to be identified.' It was marvelously creative. A magic asterisk would cost negative $30 million or $40 billion or whatever it took to get to a balanced budget in 1984 after we toted up all the individual budget cuts we had approved."

Throughout the book, Stockman periodically says mea culpa, mea culpa, but you realize that all he describes was done with a devil-may-care attitude. It is the nation, not the actors, that must deal with the consequences. In March of this year, a number of economists testified before the Joint Economic Committee that the quality of national economic statistics was in great danger. This is not the first time. Congress held hearings in 1982 and in 1983 with regard to the data bases of various government agencies. People from the private sector have tried to impress upon the government that there are certain statistical series that simply can't be transferred to the private sector and are quite necessary for many different sectors of the society.

There is a problem there, I think, that many of the people in charge of eliminating paperwork and making vital decisions with regard to research and the provisions of statistics are not experts in these areas. So you have the fox watching over the chicken coop. Unfortunately, it is not clear what can be done about this, except to urge continuous oversight of this activity by Congress, and for

those with expertise to share their perceptions of the consequences of present policies.

I turn now to another area having to do with information controls justified on the basis of national security. I think there is little disagreement that every effort must be made to keep vital secrets and military hardware out of enemy hands. Yet the notion that the United States is currently under siege by lurking information thieves has resulted in restrictions on other types of information. Today such restrictions endanger some of our fundamental civil liberties.

Behind the cloak of secrecy, information has been selectively leaked, certain laws have been stretched to cover areas for which they were not originally intended. This past week, a journalist from Colombia came into this country to receive an award at the Columbia Journalism School, but her name showed up on a list when she got to the country as being an undesirable and she was put in jail for several days. The government never stated what the grounds were for keeping her in jail, except to say that her views would not well serve the American public.

There have been reports with regard to disinformation about Libya that was released last August. As one who has been tracking the administration's loose dealings with facts, these reports were nothing new. In fact, last spring the Pentagon

announced a new disinformation program, stating that the Soviets had been doing this for a long period of time and had decided that in some areas, particularly with regard to technical and military information, it was not a bad idea.

It is interesting to me that this sorry state of affairs has been occurring for some time now, but it is as if we can't quite get a handle on the fact that government censorship, in the form of selectively informing the public and denying access to information, is happening here in what may be the world's freeest society.

The area that I want to focus on is classification. I think that this has become the principal tool of censorship of restricting the flow of information. Back in 1982 the President issued a new order on classification, making some important changes in the previous order of the Carter Administration. For the first time, it allowed the reclassification of information in the public domain. The authority of officers at the agency level to classify was increased significantly.

There is currently quite a matrix of categories of classification. Even material that is unclassified is put in several different categories; some of these include restricted access. For classified information, in addition to the "Confidential," "Secret," "Top Secret" stamps, there is "Special Access." And then there is sensitive compartmented

information. This scheme is replete with security clearance procedures, and then additional qualifying criteria based on a "need to know" standard.

I have recently been doing some follow-up research on the 1983 Presidential Directive, National Security Decision Directive 1984. This is the one requiring current and former government employees to sign lifetime nondisclosure agreements and to submit to polygraph examinations. At the time it was announced, Congress held hearings and there was much public outcry. This was the closest this country had ever come to an official secrets act. It certainly went against the long tradition against prior restraint which goes all the way back to the birth of this nation.

Congress adopted a temporary moratorium, but it had little effect. Nondisclosure contracts had been in circulation since 1981, and despite the moratorium, the administration continued to expand the number of people required to sign.

For the last several months, I have been trying to find out just how far this goes. Pre-publication review and a polygraph test are nothing new within the Department of Defense and the CIA, but it is now spreading. In fact, I think we must recognize that there is in place an incremental, institutionalized secrecy system. More than 300,000 people at different levels of agency employment and working for government contractors have signed nondisclosure agreements,

which means they have signed a contract. According to the administration, this means they can be prosecuted.

As I talk to people about this, it is clear that there is tremendous confusion about the validity of these kinds of requirements. One of the things that concerns me most is that over time people's thinking about these issues becomes more accepting. It's very difficult to argue with Rome, or to challenge limits on speech when jobs are at stake.

People whom I interviewed three years ago, when I was researching my book, had one point of view and today they have modified that considerably. It's -- certainly in Washington -- very uncomfortable to be contesting national security requirements during years when there have, at any point in time, been at least five or six espionage cases. There is the sense that we have to lock the doors and close the windows and tighten controls on the flow of information.

But this acceptance of secrecy as the norm is also occurring with regard to restrictions on the transfer of technology and scientific research, two very important areas.

For at least ten years, several government agencies, including Commerce and the Pentagon, have insisted that there is a hemorrhage effect going on with regard to other countries gaining access to both hardware and technological information. So what to do about it.

In the early 1980s, a panel was set up ("Carson

Panel") comprised of people from the intelligence agencies, from the Pentagon, and from the scientific and university community to look at some of these issues, and to consider what kinds of controls should be tolerated which would not endanger progress deriving from the open university and shared scientific research.

They came up with a series of recommendations. In particular, they said restrictions should be justified on account of information or hardware which has a near term military application. The report emphasized the importance of minimizing controls that do not target the actual point of leakage and yet jeopardize the open society.

These recommendations were issued, as I recall, in 1984 and were evidently taken under advisement without much effect. Since that time, there continue to be conferences in which people are required to prove citizenship in order to attend, where unclassified papers are restricted. So the scientific community is still working on this problem.

There is currently a study being done by the National Academy of Sciences looking at what controls should be set on dual purpose technology. It is possible, of course, for certain technological information to have both civilian applications and military applications. How do you draw the line? How do you know that by restricting something so that it won't get into the hands of the Russians, you're not

limiting its use for civilian applications here in the United States?

How do you avoid changing the entire tenor or approach of scientific research on the nation's campuses, where the unfettered sharing of information has long been thought to keep the United States in the technological forefront.

There is a sense, amongst some people studying such issues that key decision-makers operate on the basis of restrict first, ask questions later. This is certainly of concern to the private sector, as this approach can limit commercial trade with other countries and inhibit economic expansion.

In summary, what issues do we have to take up in dealing with government policies that restrict the flow of information? One involves evaluating the justifications given for changes in government information policy. There are words which are not clear or even comprehensible to most people, but have been touted as progress: "Deregulation", "Paperwork Reduction." Phrases such as the "national security", which today is often invoked in areas where there's no national security threat whatsoever.

You have to look at whether information itself is the central issue. Perhaps in the same way that in the "Name of the Rose" the book itself wasn't really the point, efforts

to control people's thoughts and actions are really at issue. What information might lead people to do. It is the nature of the bureaucratic state to regulate information in such a way to maintain law and order, to keep things safe. We can see this trend gaining speed in the current period.

I also think that information is often used to redistribute resources. This is certainly happening today. It is the reason why an issue such as privatization has become so controversial. It isn't just that some information might be produced more efficiently by the private sector. It's what happens when it flows out of the areas where it's visible and acceptable to the public? You are redistributing a resource and you are, in that way, perhaps in some areas -- particularly when it comes to information about government activities -- limiting the possibility of public action.

I think, in this area, again the private sector understands the full import of government policy better than the government. I have listened to speakers from the Information Industry Association and others who acknowledge that the need to pick out categories of information which may need to be in two places, both in the private sector and in the hands of government. New patterns of access will serve, but may inflict serious harm on a multiplicity of interests.

The third issue has to do with equity. Dealing with government information which has been collected with taxpayer

money, we are dealing with common property. If that property is to be divided up, if information is to be restricted, who is going to lose out? Will anything be done to assure that those who have less won't have still less, won't be left out and marginalized entirely.

Equity issues also pertain to the issue of democratic liberty. It is cause for concern that the government seems to have more and more authority to restrict information while many groups of the society have less ability to follow the government's programs and engage in meaningful discussion due to careless or deceptive information practices.

I would recommend more pooling of interests, more line-crossing. When I was speaking to a person working on the study for the National Academy of Sciences, Michael Wallerstein, he was saying it's really a shame that government contractors have yet to challenge some of the government's secrecy regulations, that there are people from OPM or the Department of Energy that go in and they insist that employees be given polygraph tests. And they hold that person's job in their hands.

The contractors have not banded together to question some of those regulations because the economy of the corporation depends on the money from the government. Some improvement could be brought about if the government contractors would team up with the scientists, research

laboratories and others who understand that we're dealing here with several different issues at once. We're dealing with the health of the country's economy; we're dealing with technological progress; we're dealing with the spirit of scientific endeavor.

There are other areas where such teaming up is going on. The American Association of University Professors has recently put out an excellent study called "Liberty & Learning." It recommends that people at different levels of education together focus on threats to First Amendment freedoms.

It would seem to me that the private sector could do more to advocate the preservation of information that up until now has been produced by the government. Whether companies should bear primary responsibility, whether certain information should be preserved by the government. Attention to this issue needs to come not only from the taxpayers, who in recent years have not had a lot of clout in Washington, but from the private sector itself.

And finally, I will close with a call for publicity for some of the old values, including access to information, its value to the public, the way in which it can be used to gain greater knowledge about problems which affect the entire nation. The central value of information as a tool for preservation and continuity and participation needs to be held

up to a government that, much like the priest in the "Name of the Rose," has not seemed to stop at some very reckless decisions.

"GOVERNMENT INFORMATION: AN UNDERUTILIZED RESOURCE"

BY MARILYN GEL MASON

I wanted to do a brief commercial. This is the book that was referred to, THE FEDERAL ROLE IN LIBRARY AND INFORMATION SERVICES. I wrote it after my stint as director of the White House conference and before I realized that no one really cared about information policy. I find that the quickest way to put someone to sleep is to say the words "information policy." Before you have completed the second word, their eyes begin to glaze over.

However, there is a gentleman who has figured out how to deal with that problem, and I'm going to be referring to some of his material, at least one of his articles, during the course of my speech. His name is Walter Karp, and he wrote, I think, the best article on the subject that was published in HARPER'S MAGAZINE last November.

Instead of calling this fine article information policy, he entitled it "Liberty Under Siege." Now, I ask you, what would you rather read, an article on information policy or one on liberty under siege?

When I was preparing for this speech today, I was reminded of an event that occurred to me this summer. This, as a matter of fact, is a real story. I did not make this up. I couldn't make it up. I was vacationing on Martha's Vineyard. Some of you probably heard about the weather that

the Cape had this year. I think it was the rainiest summer in the history of the world.

My husband and I were up there, and it rained and it rained and it rained, and finally after three or four days, Bob said: "You know, I really do need to get back to work." So I took him to the airport on the island, which, as some of you may know, is quite small. Well, it seemed as we arrived that probably most of the people on the island were trying to get off the island, and that little airport was just filled with people. Moreover, the fog had come in not only on Martha's Vineyard but in Boston and New York and everyplace on the East Coast, and tempers were short and computers were down, as usual. You see, it happens even outside of libraries.

I overheard a remarkable conversation. A woman who had managed to keep her sense of humor through the hours she had been waiting went up to one of the ticket agents and said, "I would like to buy a ticket to Boston." The ticket agent turned to her and said, "Well, I can sell you a ticket but I can't promise you will go to Boston."

The woman said, "Where will I go?" The ticket agent answered, "I really don't know." At that point, the woman looked up and said, "Are these dumb questions?"

Sometimes when we talk about Federal information distribution, I get the sense that we may feel like we are asking dumb questions, or at least sometimes perhaps

unanswerable questions.

Today I was asked to do several things, not all of which could fit into the title of the speech, and so some of it may surprise you so I thought I would give you a little warning. I was asked to talk a little bit about the principles that really provide for the underpinnings for the Federal role in information collection and distribution. It does make up several chapters in my book. In case I don't cover everything, I'm sure you will want to rush out and buy the book.

I am then going to talk about a couple of policies, certainly not all of them. Then what do we mean by use? The title of the talk is "An Underutilized Resource." What do we mean by use? I think that that is not quite as clear as we might think it is. And finally, what is going on now? How are all of these principles and policies and definitions and so on being worked out?

If it sounds like a lot for one speech, it is, so I will try to talk fast and abbreviate a lot of it. First of all, the principles. When we talk about a democratic form of government -- you know, in the beginning there was the Constitution -- we are really talking about principles that contain within them a great deal of tension and ambiguity. Sometimes we like to hope that many of these things are more straightforward than they are, when, in fact, our government does have a lot of tension and a lot of balance, or sometimes

we feel like it is imbalance. But the system itself provides for corrections; it also provides for delay and debate and continuing working at problems. I think that is probably one reason this government continues to survive.

I have characterized those areas of tension as, first, individual rights, and in that area what we are actually talking about is a balance between the freedom and rights of an individual and the requirements of society as a whole. The second I call state's rights, and that is a balance between the sovereignty of our various states and the sovereignty of the Federal Government. I know most of you thought that was settled with the Civil War. However, if you read the recently revised tax law, I think you will find that that conflict is alive and well and certainly being fought out in various new legislation that will eventually affect us, those of us who are in libraries.

Third is property rights, and in this area we are basically talking about private sector economic good versus public sector responsibilities. As you can imagine, I am going to talk quite a lot about that one because the present administration has used it as a way to explain a great many restrictions on information.

The question is, since I'm sure you are not here for a lesson in government, how do these principles relate to information collection and distribution and what is going on

in the country today. We can dismiss state's rights rather abruptly because that really is not the ground on which a lot of this is being fought, with the possible exception of the new tax law. I will only say, as someone who has been working in local government for the last five years in two different cities, what is happening in our urban centers as a result of these policies is almost cataclysmic.

In the area of individual rights, the First Amendment -- as you know, everybody who talks about these things has to mention the First Amendment -- protects the individual right of free expression of ideas and opinions; but by extension, it also suggests that government has a responsibility to distribute information needed for informed decision-making. This has been upheld by statute, regulation, and case law.

Basically, we are talking about several different areas: collection and disclosure, and distribution and access. In the collection and disclosure area, there are clear limits on what the government both collects and distributes, and again, this is where we have a balance between the rights of the individual and the rights of people in general to know. Clearly, what you did last night between the hours of 9:00 and 3:00 are nobody's business. I watched the baseball game. I suspect some of you may have been doing that. But there are clear limits on our right to know. These rights are protected by the Privacy Act and a number of

other government initiatives. Basically it is, in fact, a protection of individuals.

I mention it today even though privacy is not the subject of the speech because I think it is important to keep in mind that this is a limitation on our right to know. Certainly national security has been used and used and used and used recently. There is, I think, an important element there that should not be thrown out even by those of us who feel that those words, that rubric, has been used to cloak a great many items of information that ought properly be available to voters. Nevertheless, national security is clearly a valid reason for limiting access to information. It is just difficult to tell where that line should be drawn.

Finally, of course, there is information that is collected by government agencies like IRS and Census Bureau information that should not be transferred to other government agencies. There are issues concerning that, as well, in government today.

Distribution and access is an important government responsibility. In those areas we have policies. Certainly the Freedom of Information Act is an important piece of legislation, the intent of which is to make information about how the government operates available to citizens who might need to know how the government operates before they vote.

The Government in the Sunshine Act also provdes a

means for citizens to know what their government is doing. There have recently been limits placed on the distribution and access function of the Federal Government. Certainly the American Library Association has done an admirable job in collecting and distributing information about publications that have been discontinued by the Federal Government and a variety of actions taken by various agencies that have limited access to information.

The reinterpretation of the Freedom of Information Act, I believe, was discussed briefly by a previous speaker. I am sure you are going to be hearing a great deal more about that. Certainly the downgrading of the Federal responsibility to provide information with its shift to the private sector, the privatization, if you will, of government information has some very important side effects, and the use of the Paperwork Reduction Act of 1980 has granted unprecedented authority to the Office of Management and Budget to control the flow of Federal information.

Now, it is in some of these later areas that I find a great deal of troublesome activity. The Federal Government appears to be saying that property rights supersede individual rights, a notion that I find difficult to understand and difficult to communicate. The public sector/private sector conflict was never heard of ten years ago, at least in the context of information distribution. It suggests some

questions to me. If the government is somehow infringing on the right of private information distributors when it distributes its own information, I have to ask who owns the information and why is it unfair to distribute it? When is distribution competitive? What are the hierarchies of value involved in this sort of activity?

In the report that was put out by NCLIS several years ago on public sector/private sector interaction, I was amazed to find almost a suggestion that the government should not distribute information unless there is some compelling reason why it should, as opposed to the previous presumption that the government should distribute information unless there is some compelling reason why it should not.

Before I go on and talk about what is happening recently, I would like to talk a little bit about use of government documents and what constitutes adequate use and why some of us may feel that government information is, in fact, being adequately used while others may feel that it is not.

I am increasingly concerned about what I see in the library profession and have called a McDonald's mentality, the desire to reduce what we do to the lowest countable common denominator. Circulation becomes more important than reference, and we assume that government documents are not adequately used unless we have thousands of people flocking into those collections.

I would like to suggest to you that that is not the case. The library rhetoric for the last several decades has focused on the fact that libraries exist to serve the individual, and like many other agencies in our communities, ladies and gentlemen, that is not true. Libraries exist for the social good. The social good is perpetuated by individual actions, but I suggest to you that if a reporter comes into the Cleveland Public Library and does research about the impact of the local nuclear power plant and writes that information up in the CLEVELAND PLAIN DEALER and if it is then read by hundreds of thousands of people who are going to be affected, that collection has been adequately used even though it was used by only one individual.

I was giving a speech similar to this in Georgia about a year ago. I talked about the fact that many government documents had ceased publication and I felt that this was damaging the public's right to know and that it was, in fact, a cover for the government's attempt to hide information that should actually be made available to the public.

I used the Savannah River Project as an example. During the question and answer period, a young woman got up and she said to me, "You are absolutely right. I work for the Savannah Nuclear Power Plant. Information that was previously made available to the public through government documents is no longer being published. It is available only in internal

documents, and those are to be discontinued next year."

Now, I did not plant her in that audience, but it was a real life situation, an example of what is going on. So I would say that as far as the use of our documents collections go, I think they are being used. The people who do need the information know where to get it. The fact that my 15-year old son does not hurry down to our documents collection every week to do his homework doesn't trouble me particularly. The fact that we may not have thousands of people going through there, that doesn't trouble me either. We don't need to have circulation to explain the value of that collection. The fact remains that the government has a responsibility to release information about its activities and to make it available to the public.

The second thing I want to say about use of government documents is that if they are not being published, they are certainly not being used, and that is a much more troublesome issue. We have lost between 35 and 40 percent of government documents since the Reagan Administration came to power. Some of those were trivial and probably ought to have been discontinued, but others were not.

I am going to give you some examples at this point of some of the things that are going on under the cover of the Paperwork Reduction Act and the newly-interpreted Freedom of Information Act, a document which may have to be retitled if

the trends continue. Many of these examples are drawn from the article I mentioned earlier, "Liberty Under Siege." I think that they are dramatic examples of the trends I have discussed, and these trends are ones that we must be concerned about.

I mentioned the discontinuation of some of the printed material. In 1981, under the stated goal of the elimination of wasteful spending on government periodicals, the U.S. Government dropped a booklet on bed bugs. Edwin Meese made a great show of this. What he did not make a great show of was the fact that the CIA Report on U.S.-Soviet Military Dollar Cost Comparisons was dropped at the same time.

In looking at the Freedom of Information Act, an improvement -- they are always called improvements -- on the administration's Freedom Of Information Improvement Act of 1981 would put out of the public's reach precisely those documents that give the governed their check on government snooping.

Another improvement would make it difficult to discover how the agencies of the Executive Branch are enforcing the health, safety, and environmental laws that the White House is bent on subjecting to cost-benefit analysis.

A third improvement would make it dauntingly expensive for the Act to be used by those who inform the public -- scholars, writers, newspaper reporters, and public

interest organizations -- the very users that under the improved act pay little or nothing. As I came in, I know there was a discussion about how much payment should be received for some government documents. I am one of those that contend that we have paid for them, that one of the roles of government is to collect and disseminate needed information.

A third item is that under an order having to do with classified information, a bureaucracy which already withholds from the public about 60 million documents each year is instructed to resolve all doubts about secrecy in favor of public ignorance. The move clearly has been to reclassifying information rather than declassifying information, which had been the trend for the last two decades.

I don't have many left. I am picking only those that seem to have most to do, by the way, with the government role as distributor of information as opposed to some of the other attempts to classify information.

Some of the publications which the government no longer funds I think you may find interesting: The Survey of Income and Program Participation, which assesses the effects of its welfare policies; The Annual Survey of Child Nutrition; The Annual Housing Survey; several bulletins on occupational health hazards; warnings about newly discovered toxics; health care data from local officials. At least 50 major statistical programs have been eliminated or reduced on

such matters as nursing homes, medical care expenditures, monthly department store sales, and labor turnover.

Certainly the free market of ideas is not very free and it is not very much of a market anymore. Just going back a little bit to the conflict between the notion of property rights, the idea of cost recovery and the public's right to know, I think that if you look at the situation, what is clearly happening is that private sector companies will come in and pick up information for which it can make a profit, leaving those documents for which no profit is possible. It is not clear to me that we don't need those publications.

So if the government continues to move toward distribution only through private sector companies, I wonder what happens to that slice of information that is not profitable.

On November 20, 1984, the Defense Department issued a directive stating that every Pentagon official must henceforth withhold from the public all technical data, including any pertaining to contract performance evaluation, fraud, and results of tests and evaluation of military hardware, waste if such data are likely to be disseminated outside the Department of Defense. In other words, we are asked to pay increasingly large sums of money for defense expenditures over which we, the public, have no control or no knowledge.

If this speech sounds like it is political, I suppose it is. I think that information providers cannot avoid confronting the fact that information is political, that especially when we are talking about government distribution of information, we are talking about a hot topic. It would be nice if we could find a way to cool it down, but I haven't figured out how to do that.

We do have a government, a democratic form of government that rests quite clearly on the right of the public to know what its government is doing. If the government fails to provide that information, it is certainly a problem for us and for other citizens in making decisions. As librarians and information professionals, it seems to me that we have an obligation to confront this issue and to do what we can to make sure that government documents continue to be published, continue to be made available to the public that need them, and not to be dissuaded by the false argument that they are not used because the numbers of users are not large.

Well, to go back to my questions at the beginning, the "dumb questions," it seems to me that clearly the impediments to use are certainly the fact that the resources are not there anymore and, secondly, that what is there is being used and we should not be led astray by that.

Once again, I recommend the article that was in HARPERS. I don't believe it was in your notebook. That is

why I am stressing it, the article by Walter Karp. There is obviously much more information in my own book. I can give that another plug. I found it very difficult, I must tell you, in going back to this book and trying to digest everything that I had thought about for months and months and months and writing it and to try to say it in a short period of time.

I am going to finish by reading the end of this article:

"Imagine a faction that would throw honorable men into prison so that it could impoverish the public treasury with impunity and bend a sovereign people to its will, not just this year and the next but long after it has fallen from power.

"Imagine a venerable republic, the hope of the world, where the habits of freedom are besieged, where self government is assailed, where the vigilant are blinded, the well informed gagged, the press hounded, the courts weakened, the government exalted, the electorate degraded, the Constitution mocked and the laws reduced to a sham so that in the fullness of time, corporate enterprise may regain the paltry commercial freedom to endanger the well-being of the populace.

"Imagine a base-hearted political establishment, liberal as well as conservative, Democratic as well as Republican, watching with silent protective approval this

lunatic assault on popular government.

"Imagine a soft-spoken demagogue, faithful to nothing except his own faction, being given a free hand to turn Americans into the enemies of their own ancient liberties.

"Imagine this, and it becomes apparent at last how a once-great public can be despoiled in broad daylight before the unseeing eyes of its friends."

"THE ETHICS OF GOVERNMENT EFFICIENCY"

BY REID HOLLOWAY

As a frustrated philosophy major, I have always had a concern for the subject of ethics which is something I was forced to study at one time and now I kind of enjoy the topic but I have had to write and deliver a number of speeches on business ethics that grew out of the once widely publicized scandals of the 1970s having to do with certain companies bribing foreign clients to secure business.

I think you know the Foreign Corrupt Practices Act and have heard of that and it has led to a lot of discussion in the corridors of top Fortune 500 companies and what are the proper procedures and ways to go about getting business in today's modern life style.

As I began to get more involved in the workings of the Grace Commission, it became evident that in a number of the reactions to the Grace Commission as it was evolving, as it was doing its work, preparing its report and after it had been submitted and has now been debated and hashed over and continues to be hashed over for the past couple of years, that there emerged a rather interesting phenomenon, interesting in my book, perhaps not strange to many of you or to many others, a subject I call, "The Ethics of Government Efficiency."

For the purposes of proceeding in a logical way, I think I should begin by saying that most discussions of

business ethics -- relating back as I said again to the origins of the Foreign Corrupt Practices Act -- begin with a negative assumption, specifically that business, being premised on the profit motive, is greedy and will, therefore, stop at nothing to make money, including bribery, kickbacks, various forms of unfair competition, corruption and other breaches of honorable behavior.

It has thus come to be understood in modern parlance that a discussion of business ethics is a discussion of business un-ethics. That is, the sanctions, legal or other, that can and should be imposed upon business to deter its otherwise natural tendency toward lawless and unethical behavior in pursuit of the profit.

It is very obvious that with that basic prejudice in the minds of many in Washington at the time President Reagan appointed Peter Grace to assemble a team of business leaders to review the overall operations of government and recommend ways to improve its efficiency, an undertaking that eventually would lead to 2,478 specific recommendations for saving American taxpayers $424.4 billion dollars over a three-year period. That is twice our annual deficit. We began the task of searching for the most competent people we could find to do the job.

Before we could do that, we had to determine, of course, what it is that government does and then connect that

assessment to the evaluative resources of the private sector.

In an abstract way, we often conceive of government as being an overseer of our every day lives, a referee, so to speak. I think this context has come up, for example, in a discussion of the new tax code.

Actually, government does quite a bit more than act as referee. In fact, it does very little that is any sense abstract. If you examine its many programs and workings, you will discover that the U.S. Federal government is at the same time the world's largest lender, the world's largest borrower, the world's largest landlord, the world's largest tenant, the world's largest feeding operation and the world's largest provider of health care and much, much more.

Among other things, just the offices that the federal government occupies are equivalent to four times all of the office space in the ten largest cities of the United States. So in a very prosaic sense, the government is attempting to deliver services to people, and businessmen have the skills and tools to measure the efficiency with which these services are rendered, an efficiency that is measurable in dollars and cents.

If, for example, a government hospital provides a patient under a federal program with an appendectomy, a businessman has the tools to competently ask what is the level of service, what does it cost to provide it, how does that

compare to an equivalent service rendered in the private sector.

This is really the simplest way to express what is known in business as productivity, what you are doing and what it costs to do it, or in businessman's shorthand, output over input.

Further, if, for example, the resources available for providing government-funded appendectomies -- to use that example again -- remain constant, more or fewer of them can be rendered depending upon the efficiency with which they are performed.

That is pretty tedious dull stuff, but it is by way of assumption. Businessmen are naturally very good at these tedious dull things called improving productivity -- at least the ones that stay in business. The ones who don't, obviously lose control of their cost structure and they go Chapter 11 and fail.

This is one of the great virtues, in my opinion, of the free market system, which I am happy to speak up for, because it promotes the conservation of resources and the efficient production of goods and services.

Given the many things that government does that business does in that list that I provided before, it thus makes sense to use the techniques that businesses have learned in the battle to be productive and therefore, successful and

profitable, and put them to work for the taxpayers by applying these proven waste-reduction methods to government.

The savings potential that we recognized at the outset was enormous because when we began our investigation in 1982 the government was already spending $728 billion dollars per year. The annual rate of spending on the part of the federal government today exceeds a trillion dollars per year.

So having accepted that good and logical aim then, it also makes pretty good sense to go to the people who know the territory. We like to say, "It doesn't make a lot of sense to have shoe repairmen performing brain surgery" and by the same token, it makes good sense, we feel, to find people who are experts in computers looking at the government's computer operations.

This was one of our first key aims. At least that is what seemed to us as businessmen the right way to go about assembling our team. The response here in Washington was somewhat different.

"Conflict of interest" was the question that they first raised. If the head of IBM, for example, was suggested by Peter Grace as the man to put together a team of top computer brains and come up with some findings and recommendations about how the government operates its data processing functions, the answer in Washington wasn't, "Hey, those fellows at IBM aren't really familiar with that

particular area, why don't you go over the fellows at XYZ Corp.," or "government computers have more to do with this function than that function. You are picking the wrong experts," which is the kind of response we would be used to in the business setting; "why don't you get so-and-so from some other organization?"

No, unfortunately for the taxpayer, the conflict-of-interest response was simply the idea I started out with about business ethics: the basic prejudice that businessmen are unethical by nature, that their first priority in serving the government at the request of the President would be to figure out a way to take advantage of the assignment for their own gain.

There were very thinly veiled suggestions along that line from many of the committees that put Mr. Grace under scrutiny to testify about what is in it for the head of IBM looking at computer functions.

This was the first of a series of what to us were eye-opening experiences we encountered as volunteers new to the government environment. We soon learned that, in Washington, if you find someone who knows what he is doing, specifically someone like the head of IBM with respect to computers, who we believe is the most competent and honest man available to look into a data processing function, you have by definition, according to our government officials who speak up

under such circumstances, a conflict of interest.

If you have an expert that you have identified in something where he clearly knows the territory, this is a conflict of interest.

I think that has unfortunate ramifications and is worth thinking about in terms of the whole concept of what volunteers can lend to any kind of study. If it suggests that in order to participate in a study one must be a non-expert in order to retain objectivity, or to be free from the temptations of corruption, I think that we have some big trouble on our hands, if we are ever to be serious about government efficiency.

Now to top it all off, one of President Reagan's primary requirements was that we had to raise the money ourselves in the private sector to do the job. We would not get any government funds.

Again, from the ethical perspective, the justification was scrupulous. No one looking at government functions should be beholden to it was the President's logic. Although we knew that funding what would turn out to be a $76 million dollar task without the benefit of taxpayer resources would be a difficult and sometimes distracting task, to say the least, Peter Grace accepted that ethical logic unequivocally.

Now throughout the many months of our work not one critic who mentioned conflict of interest to my knowledge ever

once gave us credit for the selflessness of raising more than $76 million dollars required to do that job, but I believe that is because the real motivation of those who accused us of conflict of interest had nothing to do with ethical concerns.

They were merely using an ethical front to delay our work by putting us through all kinds of hearings about conflict of interest to keep us from discovering how badly managed our government is, how wasteful government expenditures are and how unfair the entire system is to the American taxpayer who is footing the bill and has no idea what is going on in Washington for the most part.

We were invading their turf. As it turned out, we were finally able to get started, several months after we should have, following many, many hearings on this conflict-of-interest issue which affected the appointments to the Executive Committee of the President's Private Sector Survey, which is what we now know as the Grace Commission. But those delays were fine as far as our critics were concerned.

As it turned out, to close the loop on IBM, we could not get the head of IBM to bring computer experts to study government computers. We could not even get them to study the Defense Department because there were too many computers in that operation, according to our critics, but, having made the necessary adjustments of assignment that eventually satisfied

the people that were raising the conflict-of-interest question, we started dividing up the project.

By way of background, there were 36 task forces that made up the Commission overall. Each was co-chaired by an average of three top executives, chief executives or chief operating officers of top Fortune 500 companies.

Together the top business leaders numbered 161 and they, in turn, appointed their top volunteers, many of them at top executive levels in their company, so that the total task force on the Grace Commission, doing all the field work, going through every department and agency, was approximately 2,000 persons.

They were responsible for their regular jobs back at their companies plus doing this volunteer work. How well I learned that. You really run out of time. Twelve of the task forces would cover cross-cutting functions instead of departments and agencies one by one, looking at issues such as asset management, personnel, cash management, data processing, user fees, broad systemic issues that could be applied throughout the government.

Then the other 24 would examine the specific services and related functions of the executive branch agency by agency, department by department.

Every task force had a project manager, a lean staff of top executives supplied by the co-chairmen, who were the

industrial giants. As I said, it numbered 2,000 people and they were responsible for their regular tasks back on their jobs. They were only working on this volunteer project in their "spare time."

Eventually we would donate more than one million man-hours of valuable know-how without one cent of burden on the American taxpayer, many giving up nights, weekends, holidays and vacations for two years.

I lay that all out because if, for the purposes of assumption, one were to conclude that the Grace Commission accomplished nothing, I think it is important to note for the historical record that it cost the American taxpayer nothing. So, anything that was gotten out of the Grace Commission was a gain by definition.

I would like to speak a little bit on another ethical focus that is of concern to me, and that is pitting the concept of efficiency against a word that we hear today in Washington and on the political hustings as well called "compassion."

Once we cleared the conflict-of-interest hurdle, the field work got started, and our critics needed new ammunition to delay us again and soon arrived at their new tack, which was that "businessmen aren't qualified to examine the operations of government."

This was kind of interesting, considering the irony

that they were complaining earlier -- in the conflict-of-interest context -- that we had too much expertise in certain areas.

Our first reaction was befuddlement for that reason and we responded that government was doing many things that business does, being a landlord, being a tenant, being a provider of health care, et cetera.

But the critical line that persisted was that businessmen coming to Washington were necessarily outsiders and not familiar with the Washington process, whatever that may mean, and finally the capper, "government was never meant to operate like a business," again, relying on the idea that businessmen are so interested in that callous pursuit of profit that no one could possibly be a businessman and be interested in the compassionate services and functions of government for the less fortunate, the needy, et cetera.

Now it is kind of tough to be a businessman in that situation and take that at face value because what this means essentially is that anything that government does in the nominal interest of those who can't help themselves is by definition justifiable.

It is really kind of like what used to be called the old motherhood argument. Having presented themselves as the defender of the poor and the downtrodden, it didn't matter if our critics were presiding over the most wasteful programs

ever imagined whose waste -- by the way -- and I think this is important to remember for anybody that is compassionate -- I believe myself to be compassionate -- that that waste redounds to the disadvantage of those these programs are intended to help, giving them less than what the taxpayers in their compassion are providing.

All that mattered was that, having labeled the businessmen there at the President's request as outsiders, we were set up in a logical trap as those who quarreled with the compassionate mission of government which was "never meant to operate like a business."

It is an old trick. No one can disagree with the horror and ugliness of poverty. So in a country of affluence that means -- from the point of view of somebody who represents the Washington establishment -- that if you don't support a specific government operation whose titular goal may be dedicated to that eradication of poverty -- even if that program may be completely wasteful and unjustifiable as far as it is handled -- you are an enemy of the poor and the downtrodden because you seem to disagree with that nominal goal.

Open intellectual discussion even becomes suspect because the one who argues for efficiency is put directly at odds with the premise that the status quo defenders have already monopolized for themselves, i.e., being compassionate.

There is no way you can argue with such a program and then still be on the side of those who call themselves compassionate. Any argument for efficiency appears to be a denial of the compassion premise.

Now I want to ask you if you think it is compassionate that a lot of what is justified by government as legitimate expenditure on the needy isn't reaching the needy.

We know, for example, that $450 billion dollars a year is spent on 963 federal social programs that were identified by the Grace Commission when the experts in Washington that we set out to ask ventured guesses of 100 or 130. When we totalled them all up and went through all the appendices of the budget and so forth, we found out that there were 963 such programs, that most of them are formulated to respond to increases in the cost of living and spending is therefore dubbed "uncontrollable."

Four hundred and fifty billion dollars a year, nearly half of federal spending, is being spent on these 963 programs but the poverty gap is still widening.

Now that should raise some questions. $450 billion is spent, 14 times what was spent on the same programs in 1965 under President Johnson's Great Society -- that is a pretty big leap -- but our findings were that this in large part goes toward administration and in benefits to persons who are above the poverty line.

Only 72 of the 963 programs are what is called "means tested" which means directed to recipients on the basis of some kind of economic need, income, net worth, family size, et cetera; 72 out of 963, and the amount spent is only $124 billion.

So, of that $124 billion, with the administrative costs and other things, $37 billion reaches the poor. So you start with this big mass of resources and it funnels down to very minimal resources, so certainly the taxpayers are not to blame. The $450 billion dollars is spent nearly entirely on almost anything you can think of except helping the needy. After the costs are netted out, you get $37 billion dollars reaching the poor. This is compassion, Washington-style.

So the poverty gap widens. This is pretty tragic. Committing more resources than ever, we are in effect losing the war on poverty and many of our legislators are telling us that the problem is budget-cutting, lack of tax revenues. I just don't buy that. I consider it very hypocritical or just plain ignorant because thanks to 332 separate and incompatible accounting systems, our Commission discovered, we know that they don't even have the information necessary to make such a judgment.

But even with the informational handicaps that would make the operation of a business next to impossible, Washington officialdom is fully aware of the fact that federal spending is

still increasing.

The real problem in my view is not lack of resources or lack of compassion. It is the manner in which the Federal government is managed including lack of information, rampant waste, inefficiency at every turn of what now amounts to a trillion dollars per year in federal spending.

When the U.S. Army makes up a payroll check, it costs $4.20 just to process the check. Isn't there something that citizen-taxpayers in the private sector with the know-how to do that for a dollar back in their own businesses have to offer so that that other $3.20 could be used for something more valuable than perpetuating a $4.20 obsolete check processing system?

Maybe that $3.20 could go to a homeless person or somebody who needs a little bit more of a direct break on welfare and I think, therefore, the link between efficiency and compassion is that our efficiency is what can turn our compassion into something more than an empty cannon.

The psychological disinformation tactic of camouflaging the waste that abuses working taxpayers and the truly needy with the cloak of self-righteous compassion is a major and inherent public relations advantage skillfully coopted by the defenders of big government, and it is deserving, in my view, of a lot more attention than it is receiving among scholars exploring ethics today because it

gets right to the roots of what is fundamentally democratic about our government establishment and what is fundamentally statist.

I believe that the ethical rooting of what is free and sacred about democracy in America is that our Constitution mandates government of the people.

When taxpaying volunteers, who pay their own way to come to Washington at the request of the President, because there is a budget problem which still persists, that is out of control, are told that they are interfering with the Washington establishment, that they don't know what they are talking about, don't understand the Washington process, that they don't care for the truly needy, that they don't understand how Washington operates, I think something is terribly wrong and we are overlooking resources that could be applied to the benefit of taxpayers and the needy alike.

I think that that kind of volunteerism is really exhibiting the purest form of patriotism and we could use a lot more of it. Peter Grace is probably the first to say that the Grace Commission's work really only scratched the surface.

Two thousand volunteers working in a government establishment that spends a trillion dollars per year really cannot get to the bottom of things and yet we still came up with 2,478 ways to save taxpayers more than $424.4 billion

dollars over a three-year period which, computed through the year 2000 with interest on money that would otherwise be borrowed on those expenditures and inflation and so forth, translates to trillions of dollars.

I guess the lesson in this is that a funny thing about freedom is that it isn't free. The cost is vigilance. Free people who are truly independent were never meant to be part of the special-interest factions that our Constitution certainly meant to avoid. Today these special interests have become the active forces fueling wasteful, overblown federal spending and have widened the scope of our government.

I believe that the future of our freedom and democracy depends on the active protection of those values that keeps government limited and straightens out what it does and makes it more efficient, and I believe that we as Americans have a duty to sort out for ourselves as citizens that spending which we consider to be wasteful, that which we consider to be efficient in terms of how we think it reflects our compassion and to communicate that to our legislators.

I think it is up to all of us to re-examine our ethics on that score and to decide for ourselves whether efficiency and compassion are two things that we must accept, as it has been set up for us, as being mutually exclusive terms. I don't think that is true and I don't think it is very intellectual.

Another funny thing that happened in our work was that even after we had once in a while made a claim that our work was voluntary and privately funded was that the mainly Ralph Nader-led interest groups complained that the donors were permitted to deduct these contributions from their corporate or individual incomes.

This opened up an interesting philosophical can of worms. "Sure, you came up with $76 million dollars," big sneer, "but you deducted it," you know, like this is a big crime. To that I have to say, of course, it is deductible and what is even more important is that you have to have something to deduct it from.

Then you go without whatever you deduct once you hand that over and give it away. It is increasingly evident, and again this is a funny thing to me as a businessman, that some people actually believe a deduction is a source of wealth, that you can just go deducting your way into prosperity -- never earn a dollar a year and just make all kinds of deductions -- and all of a sudden you are a rich man.

While I find that pretty laughable, I also find its implications deadly serious on an ethical and philosophical level insofar as individuals versus their government and where citizen-volunteers have a place and a stake in what their government is doing. Really what that is premised on as a logical base is the idea that people or companies who make

charitable donations don't have the right of ownership over their own pre-tax income in the first place.

It is almost the idea that what you earn in a year, whether it be $25,000.00 or $100,000.00 or $2,000.00 or $200,000.00, belongs to the government, and that whatever you are permitted to keep is something that is a privilege extended to you.

I find that to be rather reprehensible. In making that judgment or implying it, I wonder what some critics are saying beyond that. Are they saying that the fruits of one's labor belong to the government? Are they saying that whatever we are permitted by the government to keep in net income after our taxes is a gift of the government?

This is a major avenue of ethical investigation rarely travelled in the academy, in the news media, anywhere else for that matter.

I would like to close by making some comments about the ethics of waste. When people make big campaigns on behalf of the preservation and expansion of a central government on the notion that government is not meant to operate like a business or have the input of layman citizens who aren't schooled or credentialed in the "business" of big government, what are they saying about citizens who fund government through their taxes?

Are they saying that the government is meant to be

wasteful? Are they saying there is no right, reason or justification to be sure as taxpayers that government health care for the sick and elderly is efficiently rendered? Is the notion that government in a free democratic society is the servant of the people being challenged? Is the proposal being made that having the power of a government office means that a government officer is better than an ordinary citizen such as you or I?

I think that is a very ethically charged controversy and I think our exploration, explanation, resolution of that controversy is very fundamental to our future and how we conceive of ourselves and our country. Right now I think it should be kept in mind as we contemplate that future that we are very much interfering with and making irrevocable decisions that are about our children's and grandchildren's future with respect to how much money we are permitting our government to borrow in the credit markets.

As enormous as these borrowings are, they thus raise the price of money, what we commonly know as interest rates: interest rates on mortgages, business expansion, and this means that there is an absence of growth that would otherwise be there were those borrowings not there.

Whether you can say that you get a recession as opposed to growth or you get less growth as opposed to more growth depends upon the individual situation in time and the

psychology of the investment market.

But government borrowings account for up to 25 to 30 percent of total credit market borrowings and there is no question that when someone has that kind of demand in any market it affects the price. That has to do with whether your child or grandchild is going to be able to afford to buy a home for his family and so forth.

One of the chief findings of our Commission, however, is that the deficit, which threatens to bind our future generations into a class of serfdom, just isn't necessary.

I don't think that the perpetuation of a magnitude of waste that keeps that deficit high and crowds out mortgage money which will potentially lead to a $13 trillion dollar debt by the year 2000 -- we have a little over two trillion now, accompanied by annual deficits in the year 2000, in our estimation of two trillion dollars which is our total debt now, that is what we see in the year 2000 -- should be considered ethically permissible.

Specifically, is it ethically permissible for one generation to escape a burden of this magnitude by its refusal to cut down on its consumption or make its consumption more efficient and simply defer it through debt to the next generation? Is that taxation according to representation? Is it copping a plea? Is it ethical?

I think that is precisely what we are doing and I

very seldom if ever hear this question raised. But I think you should ask yourselves what will happen if we don't do something to correct this problem. When our children and grandchildren grow up and realize what we have done, because of what they are going to go without, are they going to forgive us for what amounts to an intergeneration rape committed in the name of compassion?

"PRIVATIZATION OF INFORMATION"

BY KEN ALLEN

Usually when I give these talks, I spend a moment talking about the value of information. I am not going to do that today except by example. Until late on Friday afternoon, I was under the impression that we were holding the conference at the Sheraton Grand Hotel. Fortunately, someone mentioned to me that we had moved to the Shoreham. I consider that a very valuable piece of information. Had I not gotten it, I would be addressing a rather sparse audience somewhere over at the Sheraton and you would probably be having a leisurely hour outside. So perhaps the value of that information is a little bit different to each of us.

Nevertheless, we did manage to join forces and I have been asked to talk about the privatization of information.

I would like to say at the outset that I don't particularly like the term "privatization." I think it has been overused. I think it is the wrong issue and it often generates an emotional reaction on the part of people. You are either for it or against it.

I think it is reinforced by the title of the session today, "Threats to Access" because at least I read it as an implication that privatization is somehow a threat to access; something I disagree with. In fact, I think to the contrary, that privatization or as I prefer to think of it, a

collaborative effort between the public and private sectors, is perhaps our best way of insuring that citizens have access to the information they need and desire.

I would like to spend a few moments telling you why. But before doing so, let me talk a little bit about whom I represent. I am with a trade association called the Information Industry Association that represents about 460 companies in the information business.

Our membership encompasses all segments of the industry: traditional and electronic publishers, data base providers, financial information vendors, stock markets, interactive electronic services, electronic mail services, computer manufacturers and telecommunications providers.

It is quite a diversity. Despite that diversity, there is a common theme: it is the recognition by these companies and their executives that they are in the business of providing individuals, corporations and governments with the information they need in the manner and format that they need it.

This industry is one of the fastest growing in the world today. Corporate estimates are that it is growing at 15 to 20 percent per year.

Apart from the economic growth that the industry offers to our society and to the world, I believe that it has made tremendous benefits to our society. Specifically, I

believe that a healthy information industry strengthens the foundations of democracy by providing citizens, businesses and governments with the information they need to make decisions about their personal and professional lives.

I ask you to look at the different aspects and segments of that industry, the newspapers and the media who provide us with news of what is happening in our government and around the world, the publishers of books who provide information we would not otherwise get -- particularly the unpopular points of view that the government might not like. The book by Ms. Demac, who I understand was on this morning, is a good example. Had we relied upon the government to produce that book, it is unlikely we would have ever seen it.

More recently, the information industry has provided access to government information, access that would not be available if we relied upon the government. Whether you are talking about Congressional information, patent and trademark information, securities information or legal information, citizens have access to a diversity of products and services that have emerged from a healthy and productive information industry -- not dependent upon government but dependent upon entrepreneurial skill and investment.

We can look at the financial marketplace today with its on-line trading, the internationalization and the globalization of world securities markets. Major changes are

occurring in our world as a result of the information industry, an industry which provides the ability to move, use and manipulate information.

Since the founding of our nation, there are at least five major factors, I believe, that have contributed to the growth of this industry.

One is the very value of information in our society. Those of you in the library community, perhaps most of all, recognize the inherent value of information in a democracy to individuals, to organizations, and to our right of self-government.

We have cherished our ability as citizens to acquire and use information.

Second of all, the constitutional right of freedom of speech -- the preservation of a diversity of ideas available through a diversity of information sources -- guaranteed to each of us.

Third, the constitutional protection of copyright, the idea that the creators of information should have the right to take advantage of what they have created and thereby encourage additional creativity.

Fourth, technology. From the printing press to radio and TV and, more recently, computers, technology has created the ability to develop new information products and services.

Finally, the last factor I would point out is the development of a competitive marketplace. Competition encourages the development of products and services that people want and desire.

The marketplace stimulates a level of investment in the production and delivery of information services and products that government could never match. If Mr. Holloway was not here today to tell us the size of the deficit, even if we didn't have that deficit, it should be obvious that government could not provide the monies necessary to develop the information products and services that all of us want.

But more importantly, that marketplace insures and preserves that diversity of information sources. We are not dependent solely on the government for our information. We can pick and choose from among a variety of information sources.

We can read what we want. We can believe what we want. We can use what we want because we have that freedom of choice and that, I think, has been stimulated and preserved by the marketplace.

So that is how we got to where we are today. But I think there are some fundamental shifts occurring in our society, shifts that we as professionals in the information business, and as citizens of our society, need to be aware of and involved in.

There are four trends that I have identified and wish to discuss. There are many more.

First, there is a fundamental change in the role of government taking place in our society. As Mr. Holloway has just told us, it has become apparent to observers of all political persuasions that we can no longer afford to provide the wide range of governmental services that we have tried to do in the past.

The American public cannot afford to shoulder the burden of additional deficits. I think that is pretty much agreed to regardless of where you sit on the political spectrum.

As a result, whether we like it or not, many government programs are going to be reduced or eliminated and that includes those involving information.

I would like to draw your attention to two programs that are being affected by budget reductions. One is the National Technical Information Service.

As you may be aware, the Office of Management directed NTIS to do a study of the privatization of NTIS. This is an example of where privatization is the wrong issue.

The issue is not who should perform the NTIS function. The issue should be: how do we insure that citizens who need access to federally funded scientific and technical information can get it in the most efficient and effective

means? It may be through government subsidy. It may be through government operation. It may be through the private sector.

But the end result should not be privatization for privatization's sake. The end result should be how to get the information to the people who need it.

As you know, there were many comments filed on this issue, most of them in support of the current NTIS. Our industry also filed comments. We did not, as many people supposed, urge that the government get out of the business totally. Rather, we said that there is an inherent governmental function.

The government has a responsibility to insure that federally funded R&D information is available in some manner. What we suggested was that a partnership be developed between the public and private sector. The government would continue to collect the information, continue to do minimum abstracting, provide the information to anyone who walked in the front door for the cost of reproduction.

Ultimately this would reduce the cost of getting the information from the government, but leave the development of value-added products and services -- specifically tailored to the needs of niche markets -- to the private sector. The investment would come from the private sector, and not the taxpayer.

This cannot happen under the current system because the private sector companies who are in the R&D arena have to buy their information from NTIS. If NTIS charges a dollar, then the private sector has to charge $1.10 and they know they will never be able to compete under that situation.

Second of all, if the private sector develops a really good product, NTIS can come in and offer it for a lower price. So we have reached a stalemate under the current system. NTIS doesn't have the money to meet the needs of all information users and the private sector is discouraged from doing so.

So we urged that, rather than eliminate the function, develop a partnership.

Closer to home, we recently saw an example a couple of weeks ago where the Superintendent of Documents decided that effective October 1st, they were going to eliminate paper distribution of materials to the depository libraries -- at least in the area of Congressional information.

The library community vehemently opposed that effort and, I am pleased to note, so did the IIA. In fact, we wrote to the Congress in support of the American Libraries Association position -- not because we oppose the introduction of new technologies but because we oppose the way that decision was made and announced.

The decision was made without the full input of all

of those who are involved in the use of government information and without fully understanding the implications of what was happening.

Fortunately, I think as a result of all of those letters, that decision has been delayed. But we are going to see more activities like that and we need to be vigilant.

The second major trend is the introduction of new technologies, something that we have all seen. I mentioned new technologies a moment ago and they have long had an impact on our society. But what we are seeing now is that the time between the introduction of those technologies and their application in our society has diminished to a matter of years and even months.

It used to take 20 years between a new technology's being introduced and its application in our society. Today, in the world of microelectronics, the interval is less than two years.

In fact, there are many instances where we see applications that are looking for a problem, one of the disadvantages of new technologies.

We find the government grappling with the introduction of new technologies. As citizens, we should demand our government take advantage of new technologies. At the same time they should not do so in a way that disrupts the ability to provide services or disrupts the basic economic

fabric of our society.

A couple of examples. Many agencies are going to something called "electronic filing." The idea is to collect information electronically, store it, manipulate it and disseminate it electronically.

There is one program you may have heard about called EDGAR. This is a project of the Securities and Exchange Commission. It is somewhat ironic in that, in this instance, the SEC was looking to take advantage of business-like opportunities and characteristics.

Specifically they were looking to take advantage of the private sector. Unfortunately, they didn't understand how the private sector operates. What they started out doing is saying that "this system is going to cost us $70 million dollars and what we will do is get it for free. We will get a contractor to come in, pay the whole $70 million dollars and will recoup his investment by selling that information."

Well, there are at least two things wrong with this approach. First, there was nobody out there willing to pay $70 million dollars for that information. Second, it would have been detrimental because, the way it was structured, one contractor would have had monopoly control over the information.

As a result, they are not getting any bidders on that contract. The SEC did make some changes in the approach,

but they weren't sufficient. In fact, we told them in January of this year that if they put that RFP out on the street they weren't going to get any bidders. Six days before the RFP closed, they extended the due date. They finally realized they weren't going to get any bidders.

Soon they are going to announce major modifications. Maybe the changes will be amenable to the private sector. We have to wait and see.

The IIA believes it would be most unfortunate if the government is discouraged from taking advantage of new technologies because of the failure of this one system.

Another area is CD-ROM application. It is happening in the private sector. It is happening in the government. The use of CD-ROM to store and disseminate information offers tremendous opportunities, but if not carefully used could fundamentally reshape our economic system.

If government starts developing CD-ROM applications and hands them out for the cost of reproduction, the private sector investment in government information is going to dry up overnight and you are going to find yourself relying totally and solely on the government for that information. Is that an outcome we want? We think not.

The third area that has exciting potential is artificial intelligence. Many agencies are looking at artificial intelligence as ways to improve their programs.

It is the 21st century manifestation of the hijacker profile used by airlines to scrutinize passengers. Exciting opportunities, but dangerous precedents.

What happens to the individual who may not match the profile that an agency comes up with? Are we going to discourage individualism as a result of new technologies? I don't have the answer, but it is something to consider before we go too far ahead.

Third, legislative changes. All too frequently legislation is failing to keep pace with new technologies. Unless we can develop a workable legislative and regulatory framework, we are going to stifle the information age before it has a chance to evolve.

We have all followed the legislation on computer crime, which is continuing to emerge. This last Congress just passed a new amendment to the computer crimes statute which is another step forward. But until last week, there was no right to privacy for electronic communication.

If you used a computer system to send data somewhere, or you used an electronic mail bulletin board, you had no right to privacy. The government could tap into it. Your neighbor could tap into it. Anybody could tap into it. There was no right to privacy.

Fortunately, in the waning days of this Congress, thanks to the support of our industry and many others, there

is now a right of privacy for electronic communications. Senator Leahy and Representative Kastenmeier fought very hard for it, and should be congratulated. This is one instance where the legislation is keeping pace with the technology.

In the same Congress was Senator Helm's attempt to pass something called Dial-A-Porn legislation. Certainly, I am not up here to defend the use of computer systems and new technologies for pornographic purposes. On the other hand, that legislation would have required the service vendor to essentially know what was in your files and also would have provided that you could use your local community standards to dictate what was pornographic.

In other words, if you dial up from South Carolina into a system that is in Utah, you could use South Carolina's standards. Is that the sort of public policy we want? Again, I don't have the answer. But these are some of the issues that are emerging from the information age.

Another one, at the state level, that was brought to my attention recently involves on-line real estate information. You can dial into a bulletin board and find out what houses are for sale around the country. California and New Jersey are trying to shut this service down. They say, "You are not a real estate broker. You don't have authority to provide this information. It is a violation of real estate law." Another example of legislation not keeping pace with

technology.

Of course, there is the whole area of information liability. What happens to the individual or the industry or the librarian who offers information that is wrong or that is misused. I note, and you may be more aware of it than I, that the State of Illinois has just passed a law providing immunity to librarians for disseminating erroneous information.

Information liability is another example of an issue where the law needs to keep pace with the technology if we are not going to stifle the opportunities of the information age.

The final area I wanted to mention was internationalization of the information industry. There are a number of issues in this area that we could dwell upon: protectionism versus free trade; developed nations versus Third World; privacy; and finally, the one I want to talk about for a moment -- national security.

Just as information has been the lifeblood of our nation's economic, social and political growth, it can, according to some, pose a threat to our nation's security.

Almost since the beginning of time the power of information as a tool or weapon has been recognized. This recognition has made information itself the object of struggle between individuals and the state and between nations in conflict.

A democracy poses the most treacherous battleground for this struggle over information. Citizens have the right to freely express their ideas and the right to know. These rights strengthen a democracy by fostering the diversity of ideas and debate essential to self-determination and self-government.

Unrestricted and open access to information also contributes to the economic and technological strength of a nation. The ability of individuals and organizations to acquire and use information in a timely and accurate fashion within the marketplace improves the decision making processes and ultimately leads to a more efficient allocation of societal resources.

But at the same time, the very information which is our strength can also, according to some, be our downfall. Information can be used against us just as it can be used for us. There are new issues and new challenges emerging from the information age which raise great concerns over how long we will be able to acquire information.

Specifically, earlier this year our Association was approached by an Air Force study team. They said, "We suddenly realized that you can sit in Moscow and Prague and dial up into Mead and Dialog and all these on-line data bases. No, there is nothing illegal about that. They are not classified systems, but somehow that is not good for our security."

We talked to them. We are good citizens. We are concerned about national security. We met with them and put them in touch with our members: the Dialogs, the Meads, the BRS's and others. In June, the team produced a 200-page classified report. Although it has not been shared with us, we understand from talking to people who have seen it that it recommends certain restrictions.

It concludes that forign access to information is detrimental to our national security, even though the information is not classified. The report posits a number of possible solutions. One is to prohibit foreign access to information.

Now, of course, since we don't know whether the user is a foreigner, you will have to control access, all persons. Another solution is that you will have to get an export license before you access any of these systems. Another one is that the vendor will have to input a software routine that says, "Joe Blow did a search that asked for this sort of information and we will now notify the U.S. government that Joe Blow is looking for that information."

Those are scary implications, especially if you carry it a step further. There is nothing in those data bases that is not in your libraries. You have to ask yourself, if we go down this path too far, are we going to be requiring that your patrons show their passport at the front door?

It is not an easy issue but it is one that we have to address. There are other things happening in this arena that I can't go into. Rest assured, however, that there are sufficient causes for concern that as citizens we need to be ever vigilant.

In fact, Secretary of State George Shultz said it best, I think, earlier this year when he said, "Our policies must always be based on the fundamental process of freedom, freedom of thought, freedom of research and the free flow of ideas. If we keep that in mind, we will benefit from our dedication to liberty even as we secure it."

I might mention that we are attempting to raise the public view of this issue and we have put together a national information policy forum on November 11th in New York City as part of our annual conference.

That panel will discuss the issue: will national security impinge on the marketplace of idea? We have a representative from the Department of Defense; we have Jack Simpson (who is president of Mead Data Central); we have Jerry Berman from the American Civil Liberties Union; and we have a gentleman from Europe, Jean Pierre Chamoux, who runs a French data base company.

We hope to raise the public visibility of the issue and to understand what the dimensions of the problem are.

I have tried to identify some of the trends that are

occurring, and there are a lot of them. There are also a lot of issues being raised. It has been said that we have embarked upon an information society and I believe that is true. At the same time, as we look at the issues that are being raised, the challenges and the opportunities that are before us, the question is, are we going to sit back and let events take their course or are we going to do something about it?

Are we going to make the information society a boon or a bane to mankind? I think there is a way in which we can get involved in that decision. To do so, we have to understand where we might go in the future. As individuals, and as a society, we cannot afford to sit back passively.

That brings me to the final item I wanted to mention. In 1985 Bob Weissman, who is CEO of Dun and Bradstreet, challenged the information industry. He said, "We in the industry are providing tremendous opportunities to individuals in society but we are also raising tremendous questions and concerns and as citizens, as members of our society, it is incumbent upon us to help identify some of those issues and to stimulate a debate by all segments of society to insure that what we are doing is in the best interest of all and not in the best interest of only a few."

We took that challenge and commissioned a study of the information industry in the year 2000. We employed the Institute for Alternative Futures, a futurist organization

co-founded by Alvin Toffler. The Institute has spent the last year working on identifying what the world is going to look like between now and the year 2000.

They have interviewed many in our industry. They have interviewed many librarians. They have interviewed futurists. They have analyzed the current research analysis and used a variety of foresight techniques. Their report, which will be released on November 10th of this year, identifies the technological, social, economic and political changes that are occurring in our society.

But more importantly, they take these trends and draw four alternative scenarios of where we can go between now and the year 2000. I would like to briefly describe these scenarios. The report does not tell us which path is the one we will travel. That is up to us. But there are at least four different doors through which we can go.

The first is the high tech information society. This is an unqualified success future, a Herman Kahn future. It is characterized by very rapid technological progress, high consumer demand, emphasis on improving productivity, greatly expanded, and hotly competitive, but relatively free global trade. Achievement values dominate. Also prevalent are optimism, achievement, motivation, and desire for material rewards, also growth of expressive, socially conscious values.

Information technology spurs economic growth,

increases citizen access to information and promotes the diffusion of many points of view. It is a strong force for democracy and freedom even in repressive societies.

The second scenario is what they call the creative society. It is a different kind of success future based on learning and human development. It is sort of a third wave future.

Very rapid technological progress is still seen. There are changing values, new organizational forms, a dynamic global economy, and an emerging vision of a better society focused on learning and the human resource.

In the values area, it is expressive; so socially conscious values dominate and blend with achievement values, desire for true satisfaction, not just symbols of success, harmony with nature, equalizing roles for women and men, a sense of membership in a single human family and responsibility for its welfare.

Information technology in this scenario contributes to a profound change of civilization. It fosters citizen participation, consumer activism and the emergence of non-geographic communities of interest. A focus on information becomes a focus on the human resource since people produce and use information.

The third future is called things bogged down. It is a disappointing future but not a disaster, with slower than

hoped for technological progress, weak consumer demand for many information goods and services, a hotly competitive global economy with protectionism and trade wars. Serious global problems emerge.

In this future, achievement values dominate, but people are frustrated. Value diversions make public life more contentious and information technology accelerates the shrinking of the mid-level white and blue collar work force. It creates more lower paying jobs than well-paying jobs and it enlarges the gap between the know's and the know not's.

The final scenario is 1984 and beyond; an authoritarian future that occurs as a reaction to hard times, a 1984 Brave New World future. Hard times exist in the global economic system and global problems worsen.

The growing diversity of information sources produces a fragmentation of viewpoints contributing to a chaotic political system. Survival and control values grow. We see a xenophobic save ourselves attitude, leading to a willingness to sacrifice freedoms for the sake of order and security. Later advanced applications of information technology are used for surveillance, for social control and restraining chaos. Socio-economic activity is regulated by a diffuse faceless leadership. Boundaries between public and private sector blur.

This study doesn't tell us which path we are going to go down. If you get a chance to read this report, you will

see that there are parts in each scenario that sound plausible. The important point is that we can make a difference. By identifying the issues, by identifying the path that we want to take, and by working together to make that future a reality, whether you are a citizen, a librarian, an information industry executive, a government bureaucrat or whatever, by working together, I believe that we shape that future such that the information age is a boon and not a bane to mankind.

"THE CARE OF INTELLECTUAL PROPERTY IN AN ELECTRONIC SOCIETY"

BY MARYBETH PETERS

I assume that you are all very familiar with the topic of copyright. As you know, copyright is a product of the technological revolution. It was the invention of the printing press that made copyright a necessity. In the United States, copyright was recognized in the Constitution, and in 1987 we will be celebrating the bicentennial of Article I, Section 8, Clause 8, which is what I will call the Intellectual Property Clause.

In that clause you find that the primary purpose of copyright is to foster the creation and dissemination of intellectual works for the public welfare, and that this purpose is achieved by giving creators and proprietors the reward due them for their contribution to society.

Until recently, most people felt that in the United States the copyright law has adapted rather well to technological changes. In the very beginning, it was only books, maps and charts that were protected; various different kinds of materials were added, for example, music, photographs, motion pictures, sound recordings, and one of the last categories was computer programs. Data bases are protected as compilations.

What has changed is the way this material is

disseminated. The distribution chains, that is, the way we get information, is going through some kind of a technological revolution, and everybody is trying to figure out how to deal with it. What I am going to be telling you about is a project dealing with new technology that I have been very closely involved in; my role was to deal with the copyright problems.

I serve as a copyright adviser to the Library of Congress' optical disk program, and this covers all kinds of materials, current print material, motion pictures, maps, manuscripts, music and photographs; these are put into digitized form and made available through a computer terminal.

I have to give Bill Welsh, the Deputy Librarian of Congress, a big pat on the back because when he was dealing with this project -- and it is a project to find out how people will accept this new technology -- he could have used all public domain material but he decided not to go that route. He decided to look at it as if we were in a full operational mode; he wondered, "how would I deal with the copyright problems?"

So what he did in the beginning was to study the copyright law, look at what materials would be included in the project, then seek those permissions and find out what kinds of problems he would face.

Up front I should say that there were two major

copyright problems with the optical disk project. How many of you have ever seen the project or visited it or toured it?

Good. Then you know it is broken down into a print project side, which deals with current periodicals, and a non-print side, which has to do more with prints, photographs, sound recordings and motion pictures. We had very, very different problems on both sides. On the print side the biggest problem from a copyright law point of view, was the fact that we were inputting current journal material into a computer system and creating a data base. This is one of the rights that belongs to the copyright owner. That is a reproduction right.

We were making the material available at the same time through different terminals in different reading rooms, specifically six different reading rooms, so that an individual reader could almost simultaneously get exactly the same thing in six different reading rooms. If you read the legislative history of the copyright law, you find that this is one of the things that Congress said they did not consider fair -- multiple access and multiple use of the same image at the same time. So that was the main problem on the print side. I think we could have argued fair use for the rest of the project, at least during its experimental stage.

On the non-print side, it was older material, and you could prehaps make a preservation argument. Additionally,

you could argue this is the only effective way that people can get access to this type of material. For example, it is very difficult to get access to some of the collections in our Prints and Photographs Reading Room; now here they all are and isn't that wonderful?

But a problem with that side of the project was the making of multiple copies, as many as 100 copies. It is very difficult to argue that you need 100 copies of copyrighted works. We needed 100 copies for preservation testing, but you can test preservation with non-copyrighted material. So that proved problematic.

We decided up front to seek permissions, and I will just tell you a little bit about the difficulty that we ran into and where we are going. As an aside, it was the Sony Corporation of America that made the copies for us, and it asked the Library of Congress to indemnify it from a copyright lawsuit. In other words, Sony was not going to make those copies unless the Library of Congress indemnified it should it be sued for copyright infringement, and we agreed to do so.

What we found was that on older material, it is very difficult to clear rights. In fact, it is practically impossible. Depending on the type of material that you are talking about, you may never be able to clear the rights. If you are talking about music that appears in a motion picture, you won't be able to clear the rights because nobody knows who

owns it. In the end we dealt with this problem by getting the motion picture studios whose films we were going to use to write a letter that said they knew what we were going to do and they did not object. In plain English, that means they would not sue us. That doesn't mean that somebody else would not.

But we really couldn't clear all the rights, and we found out with photographs and prints that don't have titles, you might as well forget it. There is no way to actually search that material. With music, the older the material is, the more likely it is to have changed hands and the more difficult it is to find present copyright owners. So we ended up with very difficult problems on the older, specialized types of material. Even when we found copyright owners, e.g., CBS News, it took two years to get in writing an agreement that allowed us to use two evening news broadcasts. So the lesson that I believe we learned was, it is not feasible to go out and seek individual permissions for the older material; it may be that some adjustment in the law will be necessary. Whether such use turns out to be considered a fair use or it requires legislative solution remains to be seen.

On the print side of the project, it was very different. The print side was in some ways easy, and it was also very instructive. If you get into this, I think what we learned will help you. Once you decide you are using current

periodicals, you have no problem. You know who the copyright owners are. They are the ones who publish them today. So we were able to quickly identify the publishers of 100 different journals we wanted to use.

I don't know if you have looked at the list of what we have got the permissions for, but it covers the waterfront. Our tactic there was a good one. We went to the publishers and said look at this magnificent new technology, isn't this exciting, wouldn't you like to help us in this experiment? We will listen to your concerns and we will work them out with you; in return we will share with you a lot of information about the use of your periodicals. We will share with you how often an individual reader calls your journal up on the screen. We will share with you how often when a person looks at a screen, they make a print of it, whether it is a photocopy that is made from a convenience printer that is attached to one of the terminals or it is made from what we call a remote printer.

We said we would be talking to the readers who use this system. We will tell you whether or not they like this technology. There are high resolution screens, but if researchers have to sit and look at these screens for a long period, we wondered how they really feel about it? So we agreed to do some very detailed questionnaires.

We also agreed to do some experimenting with royalty

payments. The user would never know it was a royalty payment, but we did say that we would play with variable charges on getting photocopies. So that was attractive to a number of publishers. Not all publishers, I should tell you. We had some very vehement dissents. The academic press area was probably more upset than any other area, and I think it has to do with limited finances.

A university press, when we asked to use one of its journals, told us about how photocopying was ruining them, and here we go asking for some new kind of technology to do more photocopying. They accused the Library of Congress of basically being intent upon killing the goose that lays the golden eggs, and admonished us that we as the nation's cultural center should be a little bit more cognizant of the rights of copyright owners. They said that they were aware of the fact that in things like this, an awful lot of money was spent for hardware and very little money for the material that the Library's patrons were going to be using.

There was the threat of a lawsuit from a major publisher who basically told us that should we use any of their material, they would see us in court. We did not ask for any of their material. Probably one of the most interesting responses came from a well known journal publisher who said he would expect an institution as grandly endowed as the Library of Congress would want to provide new ways of

providing sustenance to beleaguered publishers. He went on and concluded, "If despite the above, bureaucratic rules and regulations prevent you from paying appropriate royalties or even from addressing the issue, we will be pleased to be part of this exciting experiment," and they are part of this exciting experiment.

Two things that we learned are very, very valuable -- and we did get permission for 76 journals. First there is a new right in copyright -- a right of public display which applies to all kinds of works that are being used with the computer(if it is a motion picture, it would be a public performance right).

Public display rights are something that most publishers never thought about when they got permission themselves from authors, so we found a number of publishers who wanted to be a part of our experiment said we can't let you do this, we can't tell you you can do this because we don't have that right. So even when they had contracts, which some of them didn't, they said public display is a problem for us.

Second, a number of journal publishers do not have contracts with authors. If they don't have contracts with authors, they don't have the right to allow you to input such an author's work into a computer system, never mind publicly display it. So that was also a problem.

So we found out that a number of publishers really didn't have the rights that we needed for the new technology, and the bottom line is that if you have to go back to authors, the permission system becomes impossible to administer.

We did -- and Bill Welsh was very good about doing this -- listen to the various concerns that publishers had, and only one of them was lack of royalties. A lot of them had to do with what is the role of a library; now that we are creating these disks, what are we going to do with these disks? Are we going to sell them? Are we going to be competing with the private sector in this area? Things like what are you going to put on the disk? We got into what is the normal role of a library in acquiring material; aren't you really playing a censorship role by deciding what goes on the disk is what is going to be available to the public and what is not?

Bill Welsh put together an advisory committee made up of publishers, librarians and members of trade associations, and their job, which took two years, was to develop a set of guidelines; the guidelines were to be adopted by the Library of Congress. Just this summer, in July, we were presented with the guidelines; the guidelines have been published and they are our operative principles for current print material.

Interestingly enough, the one guideline that hung the committee up for months and months had nothing to do with

copyright; it really had to do with what the Library is going to distribute on optical disk and what is it not.

The Library of Congress has agreed not to input any material into the system that is under copyright protection without permission. These guidelines are limited to current print material. We did not in any way address non-current or non-print material. If you want to know what current means, all I can tell you is that if a work is published before 1911, it is non-current. It is old. That is, it is clear that this material is in the public domain in the United States.

It is also clear that if a work was published after 1978, it is current. But somewhere between 1911 and 1978, is a magic dividing line which separates the current and non-current material. Librarians and publishers do not agree on this dividing line. Had we tried to agree on a particular date, there might not have been any guidelines. So what we have is an amorphous term. It's a technique used in drafting a law; you state the basic principle. Current print material will not be input into the system without copyright permissions. The Library of Congress will not distribute any optical disks, if the material on them is under copyright protection without permission of the copyright owners.

Administratively feasible royalty payments are to be proposed by copyright owners, and to the degree practical, existing royalty collective mechanisms such as the Copyright

Clearance Center should be used. One of the positions that we took was -- that I took, because I was the rights and permissions person -- was that we could not seek individual permissions; individual contracts with every single publisher would take too much time.

Also guidelines provide that browsing will be a free service to the user; this is analogous to a reader going to a library to see what is available. After that, use is negotiable, and it will be up to publishers to decide what should be paid for and what should not, and whether the payment should be a one-time flat fee up front or a transactional kind of a charge.

Most who worked on the project are concerned about a per-use charge -- in other words, a transactional charge -- it will bog the system down. It will become terribly difficult to administer. There is concern that a lot of time will be spent collecting a few pennies.

In 1983, at the beginning of the project, the publishers advocated a per-use charge; they said now that you have got this technologically wonderful system, you have the means to charge for every use. On display, you will pay x cents, on printing out with a paper copier, you will pay x more cents, and if you want multiple copies, this is the charge. The Library was extremely concerned about the administrative costs of something like that.

The good news is that publishers have listened to libraries, and they have specifically listened to the librarians on the advisory committee about the effect of a per-use charge, especially if this charge is not going to be passed on to the user; this is a time bomb for the library because they don't know what it is going to cost them. The way that budget cycles go with libraries can be problematic. This is a problem for everybody, and librarians and publishers are going to have to work together.

Publishers seem to be going toward up-front charges. For example, one publisher suggested that a library would be paying a single fee for covering machine-readable copies; this fee would allow photocopying. Thus, there would be a specifically-negotiated agreement with a library; where you have multiple terminals like we would have, there would be a charge based on the number of terminals that are in use. So that today if the Library of Congress has six terminals and tomorrow they have 100, you would be paying more when you added the 94 additional terminals.

In dealing with the published we were concerned because it has taken much longer than anticipated to get the project up and running; and we really don't have much data. Last year we asked them to give us extended permissions through December 31, 1986, and recently we realized that we would not be able to evaluate the project by this date. So we

needed to go back and ask for a second extension, this time through September 30, 1988. We were concerned that the publishers would not agree to continue to support the project on a royalty free basis.

However, at a recent advisory committee meeting we learned that publishers are in a state of flux. In fact some publishers were concerned that if they had to deal with us now and offer royalty agreements, they wouldn't know what to do. So both sides, the Library side breathed a great sigh of relief, and the publisher side breathed a sigh of relief and said let's work together over the next two years, let's see how all of this plays out.

So my advice to you is, when you are dealing with copyrighted material, be very aware of the copyright law. You have to be very concerned that publishers get the rewards that are due them and that libraries have the necessary materials available for their users; we have to be sensitive to those rights and needs. I believe that if the parties continue to work together in the spirit that we have seen in the past two years, I think that somehow everything will work out.

So my bottom line is that although the Office of Technology Assessment said new technology is placing terrible strains on copyright that it can't deal with, it does appear that the marketplace and the concerned parties can, in fact, make copyright law work.

"THE IMPACT OF TECHNOLOGY ON ACCESS TO GOVERNMENT INFORMATION"

BY MARY J. CULNAN

INTRODUCTION

Public access to government information is considered essential to the functioning of a democracy. For example, in a 1980 study, over 350 managers in the corporate headquarters of two very large U.S. organizations rated "government regulation" as the most important type of external information needed to perform their jobs. In 1982, the Government Printing Office distributed over 43,000 titles to the over 1300 depository libraries for subsequent public use. The Federal Government also expends several billion dollars annually on scientific and technical information (STI); the bulk of this expenditure supports the use and authorship of STI.

Currently, the majority of public information provided by the Federal Government for end-use (as opposed to being disseminated for repackaging by the private sector) is disseminated as paper or microfiche documents. Files of statistical data and public numeric databases as well as bibliographic information from the Superintendent of Documents Library Division are disseminated in machine-readable format. The advances in computer and communications technology over the past decade create opportunities for dramatically changing the means by which government information is currently disseminated and accessed. At the same time, technology also

creates opportunities for the private sector to develop and market products and services based on public information. The purpose of this paper is to discuss the implications of the applications of technology to the dissemination of government information.

One underlying theme of this paper is that technology is essentially neutral. Threats to public access and improved access can both result from the use of technology to implement public policy. Two aspects of access will be considered: Awareness which includes the ability of an individual to identify the existence of a particular documents, and Availability, which includes the ability of an individual to gain physical access to a particular document. Further, the paper considers two types of government information. Public information is defined by Title 44 of the U.S. Code as "informational matter which is published as an individual document at Government expense or as required by law." Government information also includes information created for internal use which may be accessed by the public by making a specific request (such as a Freedom of Information Act request) directed at a particular government agency.

The paper will be organized as follows. First, the technologies which are relevant to the collection, dissemination and storage of government information will be described. Next, the policy issues related to information

access will be raised. While the issue of privatization is central to this policy debate, it will not be discussed here since it is the focus of a separate paper in this volume.

RELEVANT TECHNOLOGIES

A wide range of technologies including computer, telecommunications, micrographic, and video have the potential to impact access to government information. The trend in recent years continues to encompass increased capacity, decreasing physical size and declining costs. Technologies such as optical character recognition, laser printing and optical disk which were at one time too expensive for all but the largest organizations are now commercially available at a reasonable cost for personal computers. This paper will focus largely on computer and communications technologies as the current policy debate centers largely around the building and maintenance of computerized database systems and the types of online access which are subsequently provided as replacements for paper-based information products.

TECHNOLOGIES FOR CREATING, MAINTAINING AND STORING INFORMATION

Substantial productivity improvements in the creation of information may be achieved through the use of computer-based word processing systems, such as software packages which operate on all types of computers ranging in size from a desktop microcomputer to large mainframes. Optical Character Recognition (OCR) converts data on paper

into machine-readable format without any intermediate keying. Electronic filing systems, database management systems, and computer-assisted retrieval (CAR) can be used to store and retrieve documents in paper, microform or electronic media. Optical disks can significantly reduce the physical space requirements for document storage, and are capable of storing text, graphics and images.

TECHNOLOGIES FOR ACCESSING AND USING INFORMATION

The combination of computer and communications technology has the potential to improve both awareness about and physical access to government information. New ways of sending data over telephone lines (e.g. packet-switched networks) as well as replacements for traditional copper wire telephone lines such as fiber optics and satellite communications provide increased transmission capabilities at declining costs. New communication applications such as electronic mail, computerized bulletin boards and national access to online databases are made feasible by the communications technology. Distributing databases on optical disks makes it possible to access this same information locally, without incurring communications charges. Videotex applications have only recently begun to penetrate the home market through the use of personal computers, and these applications are expected to increase in the future. Intelligent copiers and desktop publishing applications may be

used to distribute rapidly and print high quality copies of documents of any size. Decision support system and expert system applications facilitate the analysis and use of numerical information using quantitative modeling tools.

DISCUSSION

The positive impacts of substituting electronic technology for current practices include efficiency, more timely access, and greater flexibility in the use of public government information. Computerized databases may be used as soon as they are updated instead of waiting for the arrival of a printed index. Automation should improve the ways that agencies such as Social Security or the Internal Revenue Service are able to respond to inquiries from the public. Personal computing makes it feasible to both view and manipulate information. Electronic mail provides a rapid means of learning about the availability of information as well as for ordering a paper copy of a document. Further, some Agencies, notably the IRS and the SEC, are beginning to experiment with new technologies for collecting information from the public as a means of reducing the costs and improving the quality of processing data filed by the public.

The negative implication of the widespread substitution of electronic media for paper is the potential failure of the Government to fulfill the spirit if not the letter of Title 44 as not all citizens or libraries have the

equipment or the financial resources to access computer-based information. For these groups, electronic dissemination will severely restrict rather than improve access. Further, there are negative implications for the management of electronic records which have outlived their retention period or are erroneous, to security and privacy issues, to the potential loss of an historical audit trail when records are created using computer-based word processing and prior drafts are not retained.

POLICY IMPLICATIONS

A second theme underlying this paper is that there is no such thing as government information. Instead, there are only specific information products. For example, the Office of Technology Assessment recently identified twenty-two different types of public information. For these various products, there are specific market segments or groups of users. Much of the current policy debate results from the fact that different segments of the public have different needs, and differ in their abilities to absorb the economic and social costs of acquiring information. One failure of the current debate has been a tendency to treat government information as an amorphous entity and to view the public as a single group with one set of needs.

There currently exist six general market segments which represent potential and actual users of government

information:

1. The general public includes single individuals, small businesses and entrepreneurs, large private sector organizations, both for-profit and not-for-profit.

2. The scientific community includes individual researchers in academic organizations as well as industrial scientists who are producers and/or consumers of federally funded R&D.

3. Libraries of all types serve as intermediaries in providing access to government information by various publics.

4. The information industry repackages and markets government information as a commercial product, or produces government information under contract.

5. Other government agencies at the federal, state or local level.

6. The press, lobbyists and others whose primary business is to monitor or influence government policy.

Across these groups there are obvious differences in terms of both information needs and preferred access arrangements. Significant differences also exist within groups. For example, within the first group, two different types of individuals, managers in a large corporation and graduate students, may both need to access the FEDERAL REGISTER. The managers in the large organization are likely

to consider it a small price to pay a commercial vendor such as Legi-Slate for next-day online access to regulatory information they need to manage their firm. The graduate student may not be able to bear the costs of accessing the commercial service, but he/she may not require the same degree of timeliness either and will be equally well served by accessing the hard copy or the microfiche in a depository library.

The federal depository library system is viewed by many, particularly within the library profession, as providing a "safety net" by ensuring that the general public has at least one avenue of unrestricted access to public information. Some fear that the increased commercialization of public information offerings will severely limit the depository libraries in fulfilling their mission. However, usage studies of both public libraries and depository collections indicate that these organizations in reality serve only a small segment of the population. Even under traditional paper-based dissemination methods, a large portion of the citizenry lack awareness or choose not to make use of the public distribution channels.

A far greater threat to public access than technology are current Administration policies that restrict the amount of public information that is collected. Many of these restrictions have resulted from the implementation of the

Paperwork Reduction Act of 1980, or in the general interest of economy. Public access to government information is contingent upon the existence of the information, independent of the use of technology for delivery.

In summary, information technology offers the potential to improve access to government information -- both public documents and federal records covered by freedom of information legislation. Realization of this potential depends to a large extent on an interested citizenry and the absence of significant technical or economic barriers. The current debate is likely to end only when policy which recognizes that the stakeholder groups in this debate vary in their needs for information, and the value that they place on various delivery mechanisms is developed.

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"GOVERNMENT INFORMATION DISSEMINATION POLICY"

BY J. TIMOTHY SPREHE

INTRODUCTION.

I confess myself puzzled at the title of this institute, "Government Information: an Endangered Resource Of the Electronic Age." To me, if anything, government information is a proliferating resource in the electronic age, and although at the Office of Management and Budget we are acutely aware of the current cutbacks in government budgets, I think that the trend in the dissemination of government information is certainly towards even more information available in more and more forms.

Think, for example, of the numbers and kinds of data products available from the population censuses from 1940 to 1950 to 1960 to 1970 to 1980, and look at the plans for the Decennial Census in 1990 and the kinds, varieties, extent, depth, and assortment of media in which information is available. The available information continues to expand and to expand almost geometrically. So I believe that I approach the question posed by the Institute from a slightly different perspective than perhaps many of you here.

I assume that you have had distributed to you Circular No. A-130. If you haven't read the document and want a short guide to it, turn immediately to the circular itself, read the sections on basic considerations and assumptions and

the sections on policy statements, and then turn back to Appendix IV, an analysis of key sections, which attempts to tell what the circular is really talking about.

My topic is government information dissemination policy taken very generally. In the process of working through OMB Circular No. A-130 on the management of Federal information resources, one of the things that I discovered was that, whereas Congress has given Federal agencies fairly explicit policy about information collection and processing and about the public's right of access to government information, there is very little statutory policy on the responsibilities of all Federal executive agencies to disseminate information, -- "dissemination" used in the sense of actively placing information in the citizens' hands the circular made a distinction between access and dissemination, so I tend to use the terms in that way.

The Paperwork Reduction Act in several places uses the term "dissemination." However, neither in the Act nor elsewhere has Congress given the Executive Branch a single comprehensive set of statutory directions regarding responsibilities of all Federal agencies for actively disseminating information. Put another way, the Paperwork Reduction Act provides statutory policy regarding information inputs to government, controlling the collection of information and the imposition of recordkeeping requirements, but says

little regarding policy on information outputs from government.

In other pertinent law, such as the Freedom of Information Act, the Privacy Act and the Government in the Sunshine Act, Congress has set policy regarding information access: that is, what government information the public is entitled to upon request. But beyond access, Congress has not defined the responsibilities of all Federal executive agencies for information dissemination, for actively reaching out and placing information in the public's hands.

The Office of Management and Budget believed it could not develop and issue comprehensive policy on information resources management without addressing information dissemination. This meant in part that the development of the circular raised some fundamental questions about the government's role as an information disseminator.

While few would argue with the proposition that the government should actively disseminate certain kinds of information, that indeed our democratic polity and our economy could not continue to exist unless the government collected and disseminated certain basic information, the problem lies in determining what is basic information and how far government agencies must go in the business of actively placing information in the hands of the citizenry.

DISSEMINATION NECESSARY FOR PROPER PERFORMANCE

Let us turn to some of the key elements of the information dissemination policy in Circular No. A-130. First, "dissemination necessary for the proper performance of agency functions." Given the absence of statutory policy on information dissemination, OMB had to arrive at a generalized formulation of agency dissemination responsibilities.

In the draft circular published in March 1985, OMB stated, among other things, that agencies should disseminate government information only where dissemination is essential to accomplishing the agency's mission. This policy statement drew the most comment in the 350 letters OMB received on the draft circular, the predominant view being that the policy was narrow, negative and overly restrictive in its conception of the government's information and dissemination role.

When OMB went back to the drawing board, we first adopted a more positive tone in revising the basic considerations and assumptions that are the background and underpinning to the policy statements. Secondly, we attempted to formulate a general information dissemination concept that would take commenters' views into account and yet remain within the spirit of the Paperwork Reduction Act.

We turned to the language of the Act itself concerning OMB's paperwork control functions and decided that it was appropriate to apply to information dissemination the

standards set by Congress for information collection, whether the activity was "necessary for the proper performance of agency functions."

OMB further pointed out that the determination as to what information dissemination is necessary for the proper performance of agency functions rests primarily with the head of each Federal agency, operating within the general policy guidelines set forth by OMB.

To say that agency heads determine information dissemination is not to avoid the issue, but rather to recognize that there is substantial diversity in agency missions. For some agencies, such as general purpose statistical agencies, information dissemination is part of their very raison d'etre; for others, information dissemination programs are relatively incidental to the purposes for which Congress created them.

ADEQUATE NOTICE

OMB introduced in the final circular a requirement that agencies provide adequate public notice when initiating or terminating significant information products or services. This policy assures the public that agencies will not act capriciously with respect to information services.

If many members of the public greatly depend on a particular information service, they should be permitted to voice their views to an agency that is contemplating

termination of the service. On the other hand, some information industry leaders are already characterizing the adequate notice policy as the most significant provision of Circular No. A-130 because it potentially gives the private sector a mechanism for protesting in advance what it may view as an unfairly competitive incursion by Federal agencies into the marketplace.

RELIANCE ON THE PRIVATE SECTOR

Circular A-130 emphasizes cost-effectiveness in information dissemination and quite clearly aligns itself with the philosophy of OMB Circular No. A-76 regarding maximum feasible reliance on the private sector when disseminating government information.

Criticism of Circular A-130 has expressed the fear that this policy will cause wholesale handing over of Federal information resources to the private sector with attendant damage to the public's ability to acquire such information at low cost.

Much broader thought and experience are needed before OMB can specify exactly how and when agencies are to rely on the private sector in disseminating government information. For example, a recent congressional report on electronic filing draws the distinction implicit in Circular A-130 between the issue of whether the government should offer an information product or service and how the product or

service should be offered.

The first question is whether the government should undertake an information activity at all or leave it to the private sector. Answering this question appears to be an inherently governmental function. Once it has been determined that the government has a proper dissemination role, however, the second question of how to carry out the role arises.

Here it is appropriate to inquire whether the activities involved in carrying out the role are commercial in nature and hence might be accomplished through contract or grant. Before OMB can issue procedural guidance about reliance on the private sector for government information dissemination, much more thought needs to be given to disaggregating the information dissemination function into its component parts and indicating which parts are properly governmental and which parts may be considered basically commercial.

ELECTRONIC COLLECTION AND DISSEMINATION OF INFORMATION

The rapid emergence of programs for electronic collection and dissemination of government information, what has popularly become to be called "electronic filing," has resulted in calls for government-wide policy guidance on this phenomemon. There are concerns over privacy, new questions about public access to government information, and fears that private sector contractors will be permitted to exercise

monopolistic controls over such information and to raise the price to the public for acquiring the information.

Previous speakers have already referred to some of the examples of electronic information collection and dissemination that are going on at the moment such as the Securities and Exchange Commission's EDGAR program. Large hospitals and other medical care providers are submitting Medicaid and Medicare forms to the Health Care Financing Administration in electronic media. The U.S. Customs Service is now implementing its automated commercial system for filing of forms for importing goods to the U.S. Customs not only receives the forms electronically but also transmits to senders the Customs disposition of filings, including applicable duty charges.

The Shippers Export Declaration is the basic form that must be filed with the Census Bureau by anyone exporting goods valued at more than $1,000.00 from the U.S. Large shippers are finding it increasingly economical to submit shippers export declaration forms on magnetic tape.

Perhaps the most noteworthy example of electronic filing to the individual member of the public is the experiments IRS is now conducting on electronic filing of individual tax returns, in which tax preparers may apply for permission to file electronic returns for individual income taxes via floppy disk.

The Patent and Trademark Office is in the midst of implementing its automation master plan under which patents and trademarks will be electronically filed, examined and disseminated.

More broadly, scores of Federal agencies now release machine-readable data files covering the widest range of subjects. The privately-published "Federal Data Base Finder" is a directory of free and fee-based data bases and files available from the Federal Government. The 1984-1985 edition runs to more than 400 pages and cites more than 3000 data bases and files available from the Federal Government.

These are examples in which the government requires large volumes of information. The information is repetitive and relatively unchanging in form, and the reporting public already possesses the necessary information technology and, in all likelihood, already maintains the information in electronic media. Electronic collection removes the necessity for reporters to generate paper copies and for the government to recapture the information electronically from paper.

In theory, at least, these situations should reduce the federal paperwork burden, reduce cost to the Government, and increase the usefulness of the information, thus satisfying three basic purposes of the Paperwork Reduction Act.

In the future, we might hope, for example, that more Government procurement information could be collected

electronically. The Department of Defense alone imposes about one-half billion paperwork burden hours on the public annually for defense procurement. That's the equivalent of about 15 population censuses every year, and the associated costs are passed right back to the taxpayer. You can begin to see that electronic collection of Government procurement information might realize truly substantial savings.

Agencies are also finding they can provide more information in more timely fashion at lower costs by moving to electronic publishing arrangements. Users are finding that they can get more information more quickly and in more usable and more manipulable format by acquiring these electronic products.

Where federal agencies can realize savings and provide better and more timely service through electronic collection and/or dissemination of information, where the information-reporting public can also realize savings by electronic transmission of information to the Government, where the information-using public can gain benefits by electronic receipt of information, and where all parties already possess the necessary information technology and know-how, the onward march of electronic collection and dissemination appears not only unstoppable, but rather desirable.

OMB recognizes that electronic filing is beset with

very real legal and practical problems that must be overcome. One example of such a problem is the definition of "what is a record" for legal accounting and archival purposes under electronic filing.

Another example is the question as to how federal agencies value their information resources. The General Accounting Office's examination of the Patent and Trademark Office automation plan pointed to substantial undervaluing its data files that produced exorbitant profits for a contractor, and many are now debating whether the Securities and Exchange Commission has been systematically overvaluing its databases. The SEC had to extend the deadline date for its Request for Proposals for the EDGAR system because of the fact that as the deadline approached, it had no bids.

OMB's main counsel to federal agencies embarking on electronic filing enterprises is: you had better examine carefully how federal policy on information collection, processing, and dissemination applies to electronic filing.

For electronic collection, can you ensure confidentiality where necessary through adequate computer and telecommunications security measures?

Does your electronic filing system satisfy requirements of the Privacy Act, of the Freedom of Information Act, of the Federal Records Act?

The General Accounting Office also criticized the

Patent and Trademark Office for entering into agreements that restricted the public's right of access to information.

When developing electronic dissemination programs, can agencies ensure that access is provided to each class of user upon reasonable terms, avoid problems arising from monopolistic control, ensure maximum reliance on the private sector, take necessary steps for cost accounting and cost recovery, and deliver information to the public at affordable cost?

Let me conclude with a few remarks on what is likely to be the impact of OMB Circular A-130. If a single answer must be given to this question, the answer is this: agencies will be required to demonstrate planning in the management of their information resources.

Within the Federal Government, information resources management is a means to perform agency missions, not an end in and of itself. Agency planners must analyze exactly how information resources management, which is a tool, supports program goals, which are objectives. The linkage between managing information resources and achieving agency program goals results in the translation of user information needs into agency information service offerings.

Good information resources management strategy arises out of a dialogue between information users, whether intragovernmental or extragovernmental, and the suppliers of

information services. Better planning improves the dialogue and focuses the information services to better serve user needs within agency objectives and available resources.

Better information resources planning should eliminate overlap and duplication in the management of information gathering, processing, and dissemination. It should diminish collection of information that is not used and assure that what is used is of real value in achieving positive results to improve citizen well-being. It should synchronize government information programs to the common goal of reducing paperwork burden on the public, while at the same time meeting governmental and public needs for reliable information.

Far from receiving less access to less information by and about the Government, members of the public can only be better served by Circular No. A.130's emphasis on systematic improvements in federal information resources planning.

"BRINGING INFORMATION TO THE PEOPLE"

BY ELIZABETH L. YOUNG

What I thought we might want to do, because it's late in the day and I think that no matter how absorbing all these sessions are one gets a little bit information overloaded, is look at some pictures and talk about future technologies. That happens to be an area of interest for me and I hope it's one for you, too.

What I'll try to concentrate on are technologies and media that are going to enable, or are enabling us to bring information to the people, which is generally my topic this afternoon. I'm sure that some of the comments, viewgraphs and slides will engender questions. And I always think the best parts of these sessions are your ideas and concerns and comments. So I'm looking very much forward to sharing with you, as I'm sure is my colleague Dr. Marchand.

Let's start with the first slide, please. Just a very brief overview of the possibilities of satellites, which of course, are one of the high tech media these days that make it possible to move information around. As this artist's drawing shows you, we have a couple of functional possibilities with satellites.

The one on the upper portion of the screen is probably the one we're more familiar with, where a signal originates from a single source. This could be data, it could

be video, it could voice, and is beamed up to the satellite and redistributed to a number of other locations.

In the lower half of the slide, however, you see another general capability of satellite technology depicted, and that's the collection capability where the satellite can receive data streams from a number of different sources, aggregate them and move them to a single or to many locations.

Further on in the talk this afternoon we'll talk about the next generation of satellites, which instead of being what we sometimes call bent pipes -- in other words, simple ways of funnelling data -- will be satellites capable of actually switching in the sky, replacing much of the terrestrial facility that today you might find at a telephone company, thereby giving the satellite an enormous capability and making the ground portion of the system relatively inexpensive and simple. So we will begin to find satellites doing switching. But at the present time, their principal function is to receive signals and redistribute them.

Now not all satellites, as you know, handle communications. We have in this country, as well as in Europe and other parts of the world, a very sophisticated remote sensing system. This slide happens to be of a satellite called LANDSAT, which is shortly to be commercialized in the United States and operated by a company here in the Washington area called EOSAT.

This was a project pioneered by the government, and as the slide shows, the satellite system can literally take pictures, or scenes as they're called, of various portions of the earth; on the ocean floor, on the ocean waters, over land. It's particularly useful for hydrology, as you can see, showing a picture both of the dam and the fishing climate; of crops; of fire detection, as we see in the middle of the screen on the left, and so on.

There is a competitive system which the French have launched called Spot Image, which is doing much the same kind of thing for the free world, and its scenes are also available for use here in the United States.

For most of the rest of the talk I'm going to concentrate on uses of communications satellites and technology specifically. But I did want to mention in passing the enormous amounts of data we can now derive from the LANDSAT and EOSAT operated system.

Here we see probably the artist's dream of how a satellite, which is over on the right-hand portion of the screen, can be used as a transmitting and receiving device, linked to a variety of conceivable other distribution devices. Another title for this might be called a teleport with distribution, because that's essentially what we have here.

We're beginning to find in a number of cities in the United States, including New York City and Columbus, Ohio

and Chicago, teleports with multiple satellite earth stations capable of both transmitting and receiving, linked by fiber optic cable or other terrestrial means to a variety of institutions and businesses.

Here you see that, at least in theory, this earth station on the right is receiving signals and passing them through broadband cable, through local area networks, which presumably are being used to interconnect businesses, to a city-wide CATV system or cable system, right down to the individual user's phone through a switchboard.

And here, yet another program that was in its experimental phase just a few years ago. This is called the radio and cable packet communications network. What it shows is the satellite up at the top of the screen being used for the long haul communications, which come down in this case to New York and San Francisco, where two different means of terrestrial distribution -- cable and radio are being used to distribute the data.

This system had a range of capability of distribution from 268 bits per second all the way up to two megabits per second. And it had accommodations for high speed fax machines up to 19.2 kilobits. So this was a successful network that has now been replicated in a number of locales, once again, with the satellite in the middle providing the long haul communications. That obviates the need to go through any other

kind of long haul system, including an AT&T long lines system or any other competing terrestrial system.

Some of the interesting things that we've been able to do with satellites lately include moving increasingly toward a mobile capability. In the very early days of satellite transmission we had to have rather large, sophisticated, and therefore, very costly earth stations; on the order of 10, 12, 15 or more meters in diameter. Not exactly the kind of technology that you could mount on the roof of an institution, a library, a school, a business or a government agency. And the technology was fairly cumbersome, and as I mentioned, expensive.

So it's only been within the last few years that we've been able to design and deploy the type of earth station which is called a transportable earth station. We now have them operating at the two main satellite frequencies that are in use for domestic communications in the United States, namely C-band and Ku-band.

This truck, which happens to have been designed by my company, COMSAT, uses higher frequencies called the Ku-band frequencies. And one of the advantages of a truck like this -- and that's a 2.5 meter diameter antenna, by the way -- is that it can literally go anywhere. It can even operate with its own power source if necessary. And that dish antenna that you see on the top is on a hydraulic mount. It can be

disassembled, folded on top of the truck and moved in the space of about 20 minutes by two average-sized people.

So we've moved from a time when we needed to go to the facility, to a time when we can bring the facility to us. This particular set of frequencies that are in use here do not have any interference from any other terrestrial systems. So it's literally capable, as you see in this slide, of being parked right in the downtown area -- here we see the Capitol in the background - and both transmitting and receiving.

This type of facility has been used primarily, although not exclusively, by the broadcast industry. And it has meant some real changes in how broadcast news is originated and shared. Among other things, it means that stations with production capability no longer have to be dependent entirely on the major networks.

If, for example, all the stations in Florida or Minnesota wanted to get together and share an event, they could deploy a single one of these trucks and beam the signal back down to all the participating stations. So just in the last two years as these smaller trucks have become popular, these smaller transportables, we have literally seen the growth of regional and state networks, or ad hoc networks where for a given event stations might want to link up on a one-time basis to receive a feed from one or more locations.

It's a very versatile technology, and it's one

that's changing the nature of broadcasting both for audio and video.

But of course, satellites are capable of operating not only domestically but around the world. Here you see an artist's drawing that begins on the left with the INTELSAT satellite. These are the satellites that are operated by a consortium of 115 countries.

INTELSAT's headquarters are just up the road on Connecticut Avenue. For those of you who are from the Washington area, you may have seen the very futuristic building off Van Ness. That belongs to INTELSAT. It's an international organization to which each country has a representative. In the case of the U.S., COMSAT is the representative.

These satellites serve to bring signals across countries and between countries and across the oceans. In this case, you see an INTELSAT satellite, (presumably it could be originating a signal at the upcoming Olympics from Korea), bringing the signal across to an international gateway earth station. In this case it would be in Santa Paula, California, linking it into a domestic system which includes another satellite uplink -- the smaller uplink which you see in this picture, sending that signal up to Satellite Business Systems domestic satellite and back down to the NBC television system network, which is now fully equipped to receive all of its programming via satellite.

That's not entirely unique to NBC anymore, but NBC was the first of the commercial networks in this country to convert all of its distribution to Ku-band satellite distribution. And it's working quite well both for international and domestic transmissions.

Interestingly enough however, the networks which pioneered satellite use in this country were none of the commercial networks. They were the Public Broadcasting Service (PBS) and NPR, National Public Radio, now using satellites for more than 10 years. And it's been a very successful distribution technology for them.

How small and how inexpensive is the ground system getting to be? The answer is very. Here you see a small dish antenna mounted about halfway up on the chimney of what appears to be a private home. This size antenna, which is less than two meters in diameter -- probably about 1.8 -- could be used for a variety of purposes.

First of all, this particular antenna was designed for what we came to call direct broadcast satellite reception, which included using very high powered satellites, not unlike the ones we've seen in the previous pictures but operating at even higher power, and therefore able to distribute signals with good broadcast quality to relatively small, inexpensive antennas like this one that you see here.

Interestingly enough, the concept of direct broadcast

satellites, which we knew to be technically possible as much as 15 years ago, has never really caught on as a business in the United States. Why? This I think demonstrates one of the lessons that all those of us who have been working with communications technology over the years have learned. The technology almost always is some years ahead of the applications. But the applications are what count.

In the United States, by the time the concept of direct broadcast satellites was introduced some dozen or so years ago, over-the-air broadcasting reached every American with at least two channels of television and many channels of radio. And even cable had a very strong foothold. Penetration at that time was around 30 percent, all the way up to approximately 50 percent of U.S. homes today.

That meant that the entertainment programming and the news programming for which people would pay money, either the advertisers or we individually with pay television, was already available. So there really wasn't a business need for direct broadcast satellites. Nevertheless, the technology had been developed.

There will be direct broadcast satellites in Europe, probably even in the Soviet Union and China in years to come, and we may see DBS in this country as well. But since the business requirement wasn't really there for it, the technology has never been implemented.

However, this type of design and the concept of the small antenna with the high powered satellite has evolved into a very interesting use called very small aperture antennas, or VSATs. And you hear about and you've probably read about what are called VSAT networks.

And these are nothing more nor less than networks that have been put up, primarily by corporations, by companies like K-Mart, Southland, Merrill Lynch and others that have deployed very small aperture antennas at a cost of around $8,000 for a purchase of the antenna plus installation, one-time cost, which then are capable of moving data back and forth between company headquarters and locations, usually a maximum of 256 kilobits in one direction, 56 in the other. And these networks are gradually springing up around the country.

Why? Think of a company that may have as many as 50 or 150 or 250 dispersed locations and is growing, and some of those locations are in very remote spots. In some cases, the locations change from year to year or new ones are put in place. It's often difficult to link them by conventional telephone lines on an as-needed basis because terrestrial facilities take time to construct.

By implementing a system using satellite antennas, these businesses can be linked very rapidly with two-way data and eventually voice. It's an alternative to terrestrial

technologies and it's beginning to catch on.

What are the competing technologies? Clearly, fiber optic cable is the major one right now and it's being used increasingly in this country for domestic communications. This particular type of cable which you see in the person's hand is very small compared to a conventional coax cable which you see lying on the table there. You can see the relative size.

This single little fiber strand is today capable of transmitting 8,000 telephone calls, and eventually with additional improvements to the technology will be capable of transmitting more than three times that many phone calls through a single cable. A very formidable option.

Today in this country we have some 1500 miles of fiber optic laid over major routes, north-south, east-west, and throughout the west. And many phone companies in addition to AT&T, MCI, Contel and others are rapidly putting fiber optic cables in place of the older, more conventional copper cables.

Yet another technology that I'm sure many of you are familiar with, which is the interactive video disk. Now this is a technology that, of course, is to some extent less dynamic because we are just beginning to learn how to make disks that we can record on. So it's a more permanent type of medium once used. However, it does have enormous storage

capability and enormous teaching capability.

Here you see a student using the video disk player on the right, the projection screen in front of him, and a small terminal, and probably participating in a branched learning program, where by use of the disk as a teaching tool, he can also access questions, respond to them, and the disk in turn responds to him.

Much of the development of interactive video disks was done through the University of Utah and the University of Nebraska under a series of grants. The technology has now been commercialized. There are several commercial companies, one that's a subsidiary of North American Phillips in California, and another one here in the Washington area, that plan to market such disks. People are developing these disks for specialized education purposes in the fields of medicine, industrial production, and other areas where self-paced instruction can be effective. This obviously has some special applications for libraries because of the excellence of the disk as a storage medium.

What I want to talk about now are some additional uses, future uses but near-term future uses of communications satellites. And we'll look in just a minute at the capability of satellites to work with truly mobile facilities where you'll actually be able to mount a phased array antenna on the top of a car or a truck and have the satellite access that

while the vehicle is in motion.

This is an artist's drawing done for NASA of a communications satellite, called the mobile satellite. The chief purpose of showing you this is that, again, as we develop more sophisticated technology in space we can make simpler technology on the ground. As you can see, this particular satellite has a huge radiating antenna. It will be several sizes larger in antenna diameter than any existing satellite.

This satellite will probably be launched within the next six years and operational here in North America to serve Canada, the U.S., and portions of Mexico.

Here is an artist's drawing of a truck with the phased array antenna literally mounted in the top of the truck. We understand that General Motors is looking very seriously at equipping future generations of trucks as they come out of the factory with this type of antenna, which will permit two-way voice and data transmissions via satellite. If the vehicle moved out of range, for example, of a cellular radio system, communications could be handed over to a satellite that would provide equally good or better quality voice and data transmission throughout its route.

Because satellites inherently cover very large areas with their signals, this vehicle would stay in range of that satellite literally over hundreds, if not thousands of

miles. Indeed, it will be probably that a single mobile satellite would be able to extend its reach to all of the continental U.S. and Canada, so that once using the satellite you would never have to transition to another medium.

The interesting thing is we actually started using satellites for mobile communications about 10 years ago with the institution of what was called the MARISAT program, now the INMARSAT program.

Here you see a picture of a seismic vessel which is moving through the water, and a drilling platform which while it's fixed in a single location is actually moving on the water, using a satellite, the INMARSAT satellite to transmit ship-to-shore data. The transmission connects to the AT&T Accunet network and can be received at major locations throughout the United States.

The INMARSAT system is in use not only in this country and Canada and Mexico, but also throughout the world because INMARSAT has satellites in all the major ocean regions and it can service ships at sea and semi-fixed platforms like the drilling platform that we saw in the last slide in all areas of the world except the extreme polar regions.

In fact, today we're looking at using these satellites, because they have such a broad reach, for extended services to include mobile services to land-going vehicles and to aircraft.

Here is an artist's drawing of how that same INMARSAT satellite could be sending and receiving signals from a moving aircraft. Now some of you who have flown in the United States may have seen or even used the system called Airfone, which is available in the States today on about 300 planes. But it uses a technology that's based on very high frequency radio transmitters, and therefore, is dependent on being within range of one of about 20 transmitters that are located throughout the United States and portions of Canada. That means the signals are vulnerable to some interference, and in some cases the planes go out of range.

Once again, with the satellites' broad coverage reach, however, once we're able to install antennas aboard the airplanes -- and that technology is well advanced, although it's not quite here yet -- you as a passenger would be able to take a small lap-top computer and with a modem that plugs into the telephone receiver of a seat-back telephone have either data or voice communications.

Similarly, of course, the cockpit crew will have the same capability, which enormously enhances the safety communications aboard planes as well as operational communications.

I mentioned that we'd talk about the next generation of fixed, sophisticated switching satellites. RCA Astro in Princeton is building this particular satellite and components

of it are being built by other companies on a subcontract basis. The advantage of this satellite, which is called the Advanced Communications Technology Satellite, is principally that it will have a baseband processor on board which means that when you send up a message to it, it can perform the switching function. It can take a message, for example, from Washington and switch it to a location in San Francisco.

It will also have multiple beams, which means that it can use its frequencies more efficiently so that a signal being generated to be received primarily in the San Francisco area is not radiating the entire United States, as is the case with the conventional satellites today. The advantage and the disadvantage of the present generation of satellites is this very wide footprint that I mentioned.

If a message is meant to go from the East Coast to the West Coast, today it could actually be received anywhere in the United States. And that same frequency, therefore, could not be reused. But with this particular satellite system, in addition to using the satellite as an on-board switch, we will be able to reuse frequencies the same way we do when we have multiple FM stations throughout the United States operating at the same frequencies but not overlapping each other.

ACTS should, therefore, make the cost of satellite communications considerably more efficient and, therefore,

lower to us as users. Indeed, there are those who are working on this satellite system who believe that when this type of satellite is commercialized in the 1990s, it may again mean that the long distance call can be brought down to a cost of 10 or 11 cents; something we haven't seen in this country since the 1940s.

In this particular program, there will be only certain areas that will be involved in the experiment. However, Hughes Communications and Fairchild have already filed with the Federal Communications Commission to build commercial versions of these satellites to be operational in the 1990s.

Finally, I thought I'd finish with a little "gee whiz" stuff. One of the other things that NASA and the commercial world are looking at is the capability as we all know of a space station. What's a space station? Well, to be crass about it, it's kind of like a service station in space.

It will be a facility in which people can exist for very extended periods of time. There have been so many different designs for the space station that I wouldn't want to stand here and tell you that this is exactly what it will look like. But what you see in this artist's slide is the space station literally being built from the Shuttle bay. You can see the Shuttle in the background with the bay open.

It will carry the components of the space station

which will be erected almost on the basis of a tinker-toy from the bay of the space Shuttle. And it's very likely that the Shuttle would never carry in a single mission all the components. It might carry the core facilities, including the power base. You can actually see an astronaut putting together a portion of the space station. The Shuttle might then return with some add-on features, but the core elements would be there in space. This will be at a low earth orbit.

And what will it do? Well, among other things, it will do materials processing in a zero gravity environment where we can do certain things with chemicals that we can't do in a gravity environment.

But equally important, it will serve as a service station for other satellites. We've had many instances in the satellite world where we've simply run out of power on a satellite that otherwise could have been functional for perhaps dozens of years, or where there's been an antenna that hasn't been fully deployed.

Eventually, this space station facility should be able to act as a repair station for communications and remote sensing satellites that have already been launched but are experiencing some problem, and they can be pulled down to the space station and repaired. Or conversely, we can send a tug out. Literally, it's called a tug in the NASA planning documents -- to a higher orbit where the geosynchronous

communications satellites are to do repair work. Probably in a few generations we'll have children and grandchildren and great-grandchildren who'll be training as repair people in space.

Finally, we're also redesigning the capability of communication satellites. One of the things we would like to have them do is not take up precious space in space. Believe it or not, we have parking problems out there. We have problems with space debris, too, and they're getting to be quite severe because the pieces of debris often float around at random or in very strange orbits.

But the fact is, if we could, as we see in this picture, have a number of different, discrete satellites operating at different frequencies, probably with different missions all sharing a power source as they appear to be here, linked in some fixed way we could great reduce the orbital spacing required and share power sources. And again, make it easier to go up and do repairs through the Shuttle tug.

All of these seem like gee-whiz technologies, but the fact is the research and development work on all of them is already going on at NASA and in commercial industry and with our partners in Europe and Canada.

The message I would like to leave with you is that the technologists want very much to work with the information providers because without that partnership nothing can become

useful or meaningful. And of course, without advances in technology there are limits to how well and how efficiently and how successfully we can share and move information.

I find this an exciting business to be in and I hope I've conveyed some of that to you this afternoon.

"INFORMATION MANAGEMENT AND PRODUCTIVITY "

BY DR. DONALD A. MARCHAND

I am very pleased to be here this morning to talk to you about information management and productivity. There is no doubt that in some ways the topic is growing in importance and businesses need to be positioned over the next several years to take advantage of the trends that are occurring that I will speak about.

I am going to address the topic in several parts. My major thesis today is quite straight forward. Every business, whether service or manufacturing, whether traditional or emerging, whether large or small, needs to plan its transition strategy from doing business in an industrial economy to doing business in an information economy. The structural changes that have been occurring in the U.S. economy, as well as in the economies of advanced Western nations, have major implications not just for the composition for the workforce, which is usually what people talk about given the occupational studies that have been done, but I think more significantly for the composition of productivity, competition and general business strategies. The old business adage that "time is money" deserves to be updated with the notion that "information is money."

The key to productivity in the information economy in my mind is to work "smarter" not just harder. Labor,

technology, capital and information must be used and deployed effectively. In the past, productivity improvement tended to focus on labor, capital and technology, and so we have developed very elaborate measurement systems at the national level to track those inputs. But, I would argue that we have to add the information input because an information oriented approach to productivity improvement is absolutely required to face competition in national and international markets.

I will explore the themes in the following sequence. First, I want to set a stage, that is, I want to talk about some features of the information economy and the information processing business which I think impact business strategy today. Then, I want to turn to some information-oriented business strategies that I think are emerging not only in service industries but in manufacturing. And lastly, I want to talk about the impacts new business strategies will have on people like yourselves who manage information resources within the organization.

THE INFORMATION ENCONOMY'S IMPACT ON BUSINESS

Let me just start with the information economy itself. For some of you, what I am about to say may be a little bit old to you and for others of you, it may be a little new. I hope I can contribute a refreshing view of the topic.

The first feature I would like to highlight, and one that is by no means trivial, is that the information economy does not supplant the agricultural and manufacturing sector; it transforms them. That means that both the tools (the computers, the robots, the lasers, the fiber-optic technologies, etc.) and also the ideas (the intellectual technologies, such as new production methods, new fertilizers in agriculture, etc.) are really transforming, in effect, the nature of those two enterprises, and so, the changing workforce composition, and the way growth is structured in those areas.

In the information economy, secondly, information is a factor of production along side labor and capital, while we may not be able to measure it with absolute accuracy, since statistical measurement systems tend to follow new trends. The underlying notion of a competitive economy, if you think about it long enough, is based on the notion of strategic use of information; after all, that is what the marketplace is about, using information effectively, trying to market products better than somebody else, and maybe being able to gain some advantage in doing so.

A third feature that I want to highlight is that the boundaries between manufacturing and services are blurred in this economy. In the information economy, many manufacturing firms are starting to realize that they are in a service business. That is, in order to sell your product, you also

have to serve the client, to deal with customer problems. You do not do so by unloading a piece of hardware on his floor. You have to deal with the solution to the problem that he sees or wants to achieve and you have to provide the enhanced services, value added services that are necessary to use that product effectively.

A fourth feature that I see in the information economy is that the boundaries between service sectors are blurring. It used to be that you could tell and define what a bank was, a retailing establishment, a real estate firm and an insurance firm. Each of them had very distinct boundaries and they were regulated quite distinctly. These days, you really can't tell any more, what business Sears Roebuck is in? Is it in retailing, insurance, real estate, banking? It's all of those. What business are most of your banks in? Indeed, they are moving into enhanced financial services, and feel that if they are allowed the room to do so, that is, not prevented by artificial regulatory boundaries in competing with financial brokerage houses, that they can do so quite competitively. Let's take another example: if you look at the four corners of most streets in America, you will find a few gas stations on those corners. It used to be that those gas stations provided only repair service and gasoline and oil for your car, but now you may find an automated teller machine on that premise; you may find a retail establishment; you may find a

machine that does automatic debiting when you stick your credit card inside the machine for the gas. In effect, what you are finding is a value added center because the real estate on which that traditional gasoline station was located is getting too expensive to simply support one use.

A fifth feature of the information economy is that the increase in quantity of information is, in turn, putting a premium on information management and not simply automation of information. Moreover, I believe that with all the concern about new technologies, one can lose sight oftentimes that you can employ hundreds of micros in a corporation, but if you don't start managing information, soon you are going to have a lot of Lotus 1-2-3's and Multimate's and Wordstar's hanging on the shelves with microcomputers being used about a half hour a day because workers are doing something else. So, the management of information becomes a real issue with respect to not only what technology you are bringing into the corporation, but also in the context of the sheer phenomenal growth of information resources available to knowledge workers.

The last characteristic of the information economy I would like to point to is that the strategic use of information for profit is emerging on a scale never before considered practical. I would just highlight the notion that the rise of the entrepreneurial movement in the last several years is worth paying attention to, because, after all, what is an

entrepreneur but a person who has some ideas, some information, some knowledge, and who wants to use it skillfully in order to develop a new business, a new set of services and products. That is, in a sense, almost the quintessence of strategic use of information in the marketplace.

THE INFORMATION PROCESSING INDUSTRY'S IMPACT ON BUSINESS

Having looked at some of the characteristics of the information economy, let's turn to the business impacts of the computer, communications, and information markets. The information processing industry is one of those basic industries of the economy like steel was in the industrial economy. That is, it's a source of innovations that result in new products and services, not just computers and communications/technologies, but new types of information products and delivery systems.

Secondly, the basic technologies underlying this industry are engines of productivity improvement. Doing more for less is almost the governing rule of the foundation technologies of micro processors, fiber-optics, lasers and other technologies.

A third characteristic of this business is that new goods are made possible through information technology. One has but to look at the phenomenal growth of the personal

computer market. A whole series of new types of products are emerging that no one here today could have predicted five years ago.

A fourth dimension of the information processing industry is that new services are also made possible through information technology. In banking and finance, the competition for cash management accounts, the competition for new financial devices, is really over the deployment of new information services for the customer whether he be a consumer or business entity.

The fifth characteristic, which is probably the most important, is the fact that the industry is still in the early part of its growth curve. Despite the fact that computers are thirty years or more old, this industry is still in its infancy, so its major effects will be felt over the next several years. We are just beginning to see the waves of change occurring as Alvin Toffler and other commentators have mentioned.

IMPACTS OF THE INFORMATION ECONOMY AND INFORMATION PROCESSING INDUSTRY ON BUSINESS STRATEGY

How is the information economy on the one hand and the information processing business on the other affecting businesses, whether they be manufacturers or services? First of all, business markets have become very fluid in terms of their boundaries. That is, it is harder to figure out these

days exactly what business you are in. A textile firm in our state, for example, gets into the computer services business and also gets into the financial services business. Auto makers run financial service houses not only for their own dealers, but also for their customers who buy autos and trucks. These days, it is much more difficult because of the nature of the information economy to discuss exactly what the boundary is between manufacturing and services.

Secondly, uncertainty in the face of structural economic change creates many opportunities as well as risks. So that risk-taking is absolutely required, you simply cannot sit tight on your business; otherwise, it simply folds up because of changes in competition, changes in the nature of who you are dealing with in your competitive market. The structural change itself in the economy is causing a great deal of uncertainty and therefore tremendous opportunities for innovations, but also tremendous risks.

Thirdly, business scanning of markets and business environments is much more complex and broader. It used to be the case that the American business scene was characterized by simply looking inside itself, that is, the American markets and participants in that market really just concerned themselves with the nature of competition domestically. Today, it would be folly in most businesses to look only to domestic markets. Whether you are in a high tech or low tech

business, you have to consider international competition, and because of that, whether you are in a small import-export business or in a large manufacturing firm, you need to consider the kinds of information demands that are put on you because you have to scan worldwide and not just domestic markets in the United States.

A fourth characteristic that is emerging in the business market is that flexible production of goods and services is absolutely required to meet the tailored and specialized needs of customers. Whether they be other businesses or consumers, we are in an age where everybody wants to be treated as an individual: so when you design a service or product, you design it with consumers in mind but not just mass consumers, but the individual tastes of certain segments of the consumer market. That kind of flexible design and manufacturing absolutely requires the skillful use of information resources.

The fifth dimension I would like to point to is that business is much more information intensive, both internally, that is being able to manage information resources skillfully, and also externally, having to scan the new markets, the emerging opportunities, the fluid boundaries between your business and competitors.

Sixthly, competitive advantage is more often these days a function of skillful information management and use.

Now in some cases, it is difficult to persuade people that this is the case; however, I simply would point to some lead industries. I spent some time yesterday with a vice president of a very large bank here in the city. Basically his concern is that information management, the bank's information management infrastructure both internally and externally, is really the number one challenge they have in their business strategy. Unless they manage it skillfully, they simply will not be successful in dealing with other large banks and other large commercial competitors. So that, in effect, there is a premium in gaining competitive advantage through the type of information strategy the firm defines for itself.

The notion of business enterprise also is changing. It used to be that if you were in a business school, the business enterprise, could be defined as a triangle and everything in there is in the business, that's the enterprise; but today what we are talking about is something called the extended enterprise; it includes the customer base; it includes the suppliers; it may include dealer relationships. What does that mean? It means that the external boundaries of the firm to its customer base is probably as important as how it deals with its internal control of management, operations and planning. So, the whole notion of what we call a business today is shifting with the idea that you have the capabilities technically and through your information resources about your

customers to manage that relationship more tightly. As you manage that, you in effect gain a competitive edge by allowing your customers to be tied more closely to your firm than some other.

Lastly, I would submit that the stress in recent years on the management of human resources that has been growing with books like IN SEARCH OF EXCELLENCE is focused on managing the knowledge worker himself or herself. What is really important about this is that, when dealing with an information economy, you are putting maximum stress on the nature of how your workers process information and knowledge. You need to treat them well in terms of compensation and other benefits because these are not only more significant in its own right, but also, more importantly, they are essential from the point of view of the future business success of the company. It is probably more significant to think of the human intellectual resources that a firm needs to preserve. After all, as one executive told me at a large computer company, if my chief engineer walks out the door, there goes all our product plans for a few years and we have to recoup a tremendous loss. So in effect, tending to the nature of knowledge resources that reside in the individuals within the company is becoming an important, and probably more important than deploying technology, managing hardbound information, etc., because the brain power that you have ultimately is what

is going to get you the kind of productivity and competitive advantage that is required.

THE EVOLUTION OF NEW IMFORMATION STRATEGIES

Let's talk about both general characteristics of business in the context of what I call information strategy. First, many businesses today are using internal information resources in a new way. Some months ago, Sears Roebuck in BUSINESS WEEK, noted that it was using its customer contract information in an new way. It collected information on who buys appliances for many, many years. But now, Sears is sending out all kinds of reminder cards to get people to sign maintenance agreements and it turned out that this was a very successful use of information that it had already had residing in its computers. I would submit that if you looked at 90 percent of the companies today, you will find information of an internal sort about customers, dealers and suppliers that is going under utilized because people don't think about maximizing those resources to gain an advantage over other firms and are simply allowing those resources to lie fallow.

A second strategy that is emerging is using information resources to offer a new product or service. Because, after all, if automation is going to make a difference in the company, it is probably going to make a difference not just in the fact that you have automated the back room

functions and finally gotten the financial management and payroll and personnel records automated and used productively, but more importantly, it is going to impact the way you design strategies to deal with your new service delivery systems, whether your customers are other businesses or your customers are consumers. In effect, we are now looking at the emergence of things like home banking, for example. We are moving in a direction where, increasingly, firms are concerned about how to offer a better product by enhancing its value through better information services surrounding it.

A third strategy that I see emerging is getting into the information processing business as a by-product of what you do. Many firms today, in manufacturing as well as service industries, are very good at certain internal skills, whether it is people resource management, whether it is management of computers and communications systems, whether it is management of office automation or whatever it is. And, those skills can be marketed effectively as consulting and information services outside the firm. And, more and more, you see large companies, like General Electric and DuPont offering facilities management and consulting services as a means of getting more leverage, over a larger universe of potential customers, not just for that particular service alone, but for other products and services the firm may have to offer.

A fourth strategy that is emerging is acquiring an

information processing business. One of the characteristics about the information processing business is that it is very entrepreneurial in nature. It is amazing how many relatively large firms in this sector were started by people who generated skillful newsletters and other reports and automated databases that they created for a company, and then figured out that there were other companies that really might want to take advantage of that information. So, I see emerging a strategy which is geared towards using these products and services or acquiring them from outside but integrating them into what you do as a business to reach out to your customer base.

Another strategy that I think is helpful is that some firms use information resources to market a product or service more skillfully. Recently, in a large North Carolina textile firm, the marketing people had a real problem. When they came to New York, they had to come up with two hundred samples of rugs and other materials that they produced. Now the problem was that you just don't go around New York gracefully when you have these large sample cases, so, this firm decided to give its marketing people a few swatches of different kinds of material and arm them with video disc players that allowed a customer to see live pictures, full color pictures and images, of all the different color variations and patent variations that were possible. Now, this is a new way of packaging, in effect, what a salesman has

to do, but allows the salesman a tremendous advantage in contacting customers and offering them the full array of products he or she offers, without having to physically lug them around. In the past, that was simply impossible, so they only carried a small portion of what their firm had to offer. I think that concept of finding better ways of using information resources to market a product or service your firm offers is a very important strategy to consider.

Another strategy is using information resources to make a product or service more viable in the marketplace. That is, in effect, building value in the product by designing the product better, putting more emphasis on quality control, etc., because after all, the emphasis on quality control in the design of a product is really a value added information management strategy. What improves the quality of the product is better use of the information and knowledge that people have about how the product is going to be used in the marketplace, what potential uses it is going to be put to and how it should be designed.

Lastly, using information resources strategically inside the firm, I think, is getting increasingly critical. It is not just the financial management or personnel resources, but resources in the context of better use of operational information. Many manufacturing firms today are not yet designing manufacturing information systems to pull up the

tremendous amount of operational data that they collect to support their workers within the plant. The reason for this is that they design computer systems that allow lots of management statistics and management reports to be given to vice presidents and other middle managers, but the information doesn't get back to the plant supervisors and plant managers, and so designing operational manufacturing based resource systems that allow that information to go back to the plant managers, supervisors, and workers, is becoming as important as producing all those management reports for vice presidents or planning people every month that need to look at them in the aggregate in order to figure out what direction the firm is moving towards.

Taking advantage of that kind of information is increasingly critical to the survival of manufacturing firms certainly, but I would submit that it is also critical to the survival of most service firms. It is allowing your salesmen, allowing your retail outlets, etc., to know as much about the business as you do at the corporate offices. Moreover, it is also quite important to designing information services that bring that information back to the retail outlet, back to the people who sell the product or service. This is a vital requirement of doing business, especially when business is far more competitive and when the boundaries of business are a lot looser.

CHANGES IN STRATEGIC INFORMATION MANAGEMENT

We have looked at the information economy, the information processing business, and changes in business strategy. Let's go inside the firm for a minute and look at the question of how the firm is changing in managing its corporate information management strategy. If anything, the modern business today is more concerned about treating information as a valued resource. I don't think a lot of firms call it that; maybe they don't have a formal policy statement, but I would think that, in many cases, defacto treatment of information resources is emerging as strategy.

Secondly, the integration of information technology and its deployment is an absolute requirement today. That means that with the convergence of information technologies in the marketplace comes an almost awesome demand on organizations to figure out how to migrate through all the different technical options an organization has and therefore pull together your plans in data processing, your plans in microcomputers, your plans in communications and office automation in order to come up with a viable strategy. Now, when you start doing that, and when companies start moving in this direction, the visibility of the corporate information management function tends to rise, not only because you are spending more money on it, but also because this function seems to provide not just a dp shop as it once

did, but it impacts every office work unit, and, as it does so, top level management becomes more concerned about how to allocate and how to plan for it.

A third feature that is emerging is that the corporate information management function is more and more being treated as a management function, not just as a technical function. Granted, you could find hundreds of firms in the United States that still have the dp manager who supervises the computers and the phones, etc. But I think what is emerging is the feeling among higher level management that this is not sufficient, that if we are really going to have strategic management over information technology, we are going to need a business manager over this function, whose skills relate to being a high level corporate executive, being able to deal with the politics of corporate life, being able to deal with human relations and not just bits and bytes, being able to negotiate the allocation of resources for this function, being able to integrate this function with the business planning activities of the top level management. These types of requirements are putting a premium on people who think about information resources from a business side. That is, what is important about the business information management for marketing, for production, for planning, not just for the management of back room operations, the latter is not sufficient.

A fifth characteristic that is evolving, and this is

probably the most exciting from your point of view, is that many new information management roles and jobs are emerging. It used to be the case in the 1960s and 1970s that we had a clear idea that a librarian was a librarian, a dp director was a dp director, and a telephone coordinator was a telephone coordinator and an office manager was an office manager. You will find that those functions, although they may be called that, are really quite different as responsibilities of people are changing. The librarian is the information center manager, overseeing not just hard copy libraries, but database systems and software libraries and other facilities. The data processing person has emerged to become the information resource manager who deals with office automation and microcomputers and user facilities and all other types of information technology systems. The office manager is really in charge of an end user facility that integrates multi-function work stations and personal computers into the office environment and, therefore, the information resources of that work unit. This poses a whole different set of responsibilities so there are lots of new jobs and roles emerging, I think, that are very exciting. But again, the premium is going to be on people that think about information resources from a point of view of their business function and the management of those resources, rather than purely from the technical end of how they ought to be retrieved or how they

ought to be retained, etc. That is important, but it is not sufficient to occupy a lot of the new positions that are emerging.

A sixth characteristic of change inside the company is that information management responsibilities are more broadly distributed in the corporation and will be in the future. That is, there has been a lot of stress in recent years, and I must say that I am one of these people that does that, about the high level information resource manager, and it seems like everyone talks about only that position. My basic feeling, however, is that although you need a focus of accountability and responsibility in a firm for information resources at the highest level, like you do for money and people, the responsibility for managing information resources is going to be widely shared within departments, work groups and among individuals within the corporation. Because, after all, if a company does not have its people imbued with the notion that information is a key resource, and, therefore, how they use it is important, how they should be trained to use it is important; then all of the automation, all of the support functions, really are not terribly productive because they are only means to an end. The end is how well the people in the company, the non-information support persons, use and value the information in their decision making or whatever they do. If they are not productive at it, then all that fancy

technology back there is not going to really help them.

The final characteristic I would submit is emerging in this internal environment of the company is that there is much more emphasis on the use and value of information and not just on information technology management. I believe the shift is just beginning. Why? Because there are too many firms today that deployed the distributed processing systems, that have bought the microcomputers, that are buying the voice and data communications networks. They've got it all out there; all the stuff is out there; it's being integrated; it's being pulled together technically. The problem with this is that you get to a point of saturation about what else you can do with technology if you don't start thinking and looking at the content of information. The critical function becomes looking at what you are going to do with the information within these networks and how it integrates into the work process, because the technology support devices are already out there, are already in the firm; they are already being deployed aggressively. In recent years, we have had firms in our part of the country buying two thousand pc's at one time, with the idea that they are going to put one in front of each manager. I say that's great! Those managers are going to have some office, you know, with a beautiful pc and a printer and everything else, but what the heck are they going to do with that thing; they are going to look at it; they are going

to use it an hour a day; you know, their jobs may not involve a lot of keyboarding, may not involve a lot of information use of the sort that goes into that computer but they have the technology. So what do you have to worry about? Well, you have got to worry about not just the deployment of technology, but also what is being done with the information resources in that work function. When you start asking those questions, those more management oriented questions about what is being done with information, then you start seeing emphasis on the context of information use, on the context of how people value information within specific work groups. When that starts becoming more explicit it means that people like yourselves can gain a certain amount of advantage within the firm by allowing people to work more productively with that information they have normally taken for granted within their work unit: To think how to use it, how to get more value out of it, etc.

OPPORTUNITIES FOR INFORMATION MANAGEMENT PROFESSIONALS

So what does all this mean for the information management professional? I think there are four roles that are important. First, you can be information problem solvers. Now, many of you may consider yourselves that today, but I submit that your problem solving sometimes ends at the point that you give somebody some information but you really don't

know what they are going to do with it in their business functions. And, I think, increasingly, you are going to have to become very familiar with the nature of those business functions that you support, so that you can provide suitable information: for example, to a marketing unit, you can provide business intelligence, which is a little different than just providing the periodicals that the marketing people need to do their work. It means providing information about their competitors, etc. that you may in fact have, but you have not used it in a strategic way to get the marketing people to pay attention to the type of intelligence you are providing them.

A second role, I think, that is important, is that you can act as a bridge. You can form a bridge between the stress on information technology, and a stress on information content. Because, again, while this emphasis on content is emerging, it is by no means at the point where it is understood by top management. They are used to thinking about machines and hardware, and they are used to making large expenditures in that area, but they really don't understand the content problem in many instances as it arises throughout the work groups, divisions and departments of the company. To me at least, this is a tremendous role for the information management professional to play, to work on bridging that gap between having technology available and really using information well

within specific work groups or departments.

A third role that is emerging consists of helping people to work smarter, not harder. I believe that as professionals, you have to see that your role is to support people in being better thinkers in the position that they are in, being better designers of a product or service, being better marketeers of a service or technique. If you can enhance the way they approach their problem solving, then I think you have played an incredibly invaluable role in helping a firm to be not only more productive, but profitable.

And, fourth, I think you can provide access to the expanding world of information resource providers that are external to the firm. Most middle and top level managers really don't understand what is out there in the external information world, and what could be available to them. To the extent to which people like yourselves can point to what is out there that could be of use, you can play a tremendous role from the point of view of getting other workers environmental information, getting them information about the fluid boundaries of their business, getting them information about the nature of their competition worldwide, that really will have either a short term or long term impact on the survivability of the company.

In conclusion, I would submit that the losers in the information economy are those companies and individuals, and I

emphasize individuals, not just companies, who do not use management information as a resource. The critical ingredient, it seems to me, for productivity and profitability, is the effective business management of information resources, technology and workers. It is that combination that has to work together before you really get the kind of productivity advantage or competitive advantage that is required in the information economy because the nature of the economy is what places a premium on the use of knowledge and information and so a firm that is going to participate in this economy has to be able to address the requirements of that participation. We are no longer in an industrial economy where the requirement was simply cheap labor, mass products, and lots of capital to support assembly line processing. We are in an economy whose characteristics are quite different and we have to be able to address the nature of that economy which requires you to treat information as a valued resource in whatever you do.

"MOBILIZING KNOWLEDGE FOR BETTER DECISION-MAKING IN THE INFORMATION AGE "

BY DAVID PEARCE SNYDER

I spend about 200 days a year on the road describing the future to different trades, industries and professions. It normally takes me approximately three hours to describe the future of any significant enterprise. Certainly, libraries and information sources are significant enterprises, but I only have 25 minutes. Thus, I will have to dispense with the nice detailed analysis that I would routinely give, and instead, go right to the heart of the instrumental realities in the future of special and technical libraries, especially here in Washington.

For 23 years, I was a career bureaucrat -- a noble calling. In that 23 years, I learned another trade, as a futurist, and I went off and did that on my own. Now, one of the nice things about being self-employed is that you can live anywhere you want; but I had no desire to leave Washington, because Washington is the motherlode of data. There is more information in this city than anywhere else in the world. Indeed, after 23 years in the bureaucracy, I could pick up the phone and find almost any data that I wanted in this city, so there was no sense in leaving.

Now, here you are, in this motherlode of data, in this information society. The premiere British cyberneticist,

Stafford Beer, once observed in testimony before the House Committee on Science and Technology that the principal task of the computer age would be to manage modern complexity, and that the tool that we had to do that with was information.

ERRONEOUS ASSUMPTIONS AND BAD DECISIONS

It's useful to note the available research on the common flaws in planning and decision-making, which is summarized in the first page of your handout. This research tells us that the principal flaw of most decision-making, and the principal source of most errors of planning is not bad data and it's not bad planning processes. It is that decision-makers make bad assumptions about the world outside of their area of expertise.

This research further tells us that, in most cases, information which would correct those mis-assumptions is readily available to decision-makers, although generally not in their operating divisions or staff offices, which place all kinds of specialized functional data at the decision-makers' disposal. Rather, the knowledge that would best serve to improve the quality of management decisions in the general information environment -- i.e. in the business press, professional journals, trade journals and routine government reports -- the kind of sources that agency libraries normally contain.

I would suggest that libraries have a vital function as the repository for general purpose knowledge and information about an agency's operating environment. It is not the particular domain of any one of the functions of an agency, but rather is the general information that everybody ought to know about and use.

Currently, modern management theory tells us that the best strategic planner is not somebody sitting up at the top of the organization. Instead, experience has shown that every operating manager should be able to think strategically; to know about the data that deals with his or her operating environment, and to apply that data to their planning assumptions. Experience has also shown that most of them don't!

As we are now entering a period of rapid demographic, economic and technologic change, decision-making will be even more difficult. In this context, the general purpose information resource of any enterprise -- i.e. its library -- has a crucial role to play.

Libraries themselves, of course, will also be confronted by these same forces of rapid change.

TECHNOLOGY: NEW WAYS OF DOING PRACTICALLY EVERYTHING

For example, much of the data we have about the

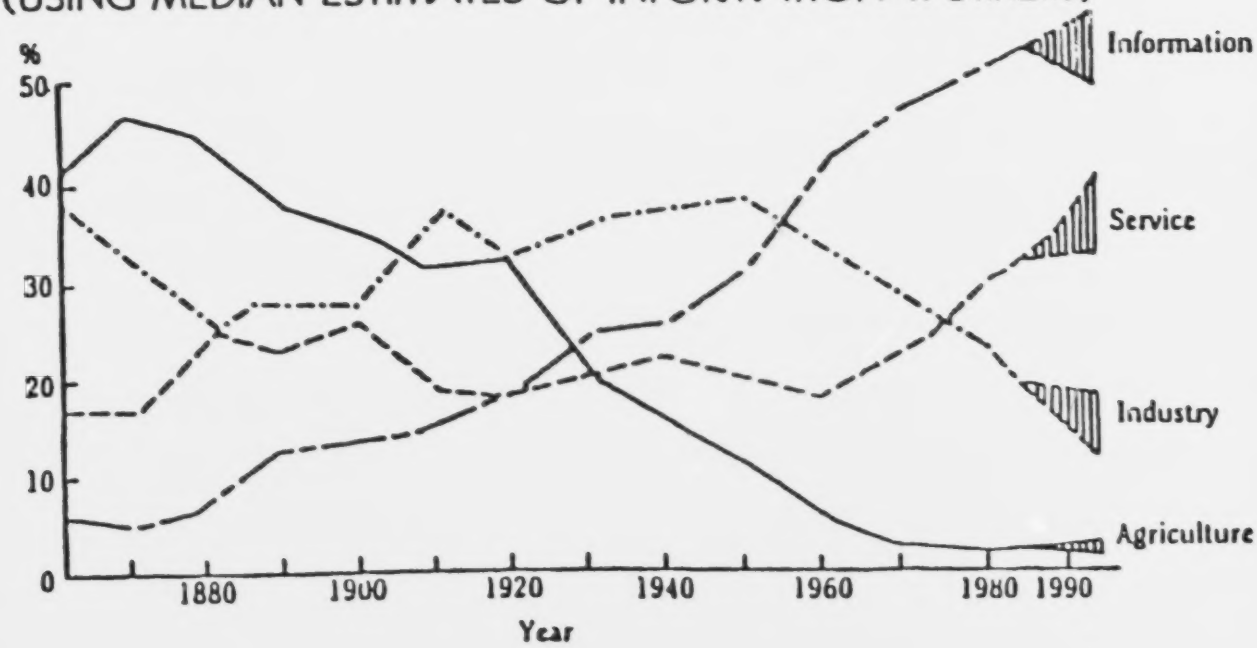
future tells us that we are in the middle of a great technological revolution, especially in information handling. We all know that a torrent of new micro-electronic technology is going to produce sweeping changes within our society. The author of one recent study by the World Watch Institute, a Washington think tank, went so far as to state that "No technology in history has had such a broad range of potential applications in the workplace."

Well, in order to fully appreciate the implications of such an assertion, we need to look at the workplace. You do have Graph 1 in your handout, showing the make-up of the U.S. workforce for the last 125 years, plus forecasts for the next ten years, broken down by four major sectors of the economy.

This shows that in 1986, we are -- at least as far as the make-up of our labor force is concerned -- an information economy; 52 percent of all the workers in America are information workers. Certainly, everyone in this room is an information worker. The vast majority of employees of the Federal Government, especially in Washington, are information workers. All management personnel, in both the private and public sectors, are information workers. So, information work is now the dominant employer in our society.

Now, when we look at the specific projections from the nation's employers on how much money they intend to invest

THE FOUR SECTORS OF THE U.S. LABOR FORCE BY PERCENT 1860–1995 (USING MEDIAN ESTIMATES OF INFORMATION WORKERS)



in automation to increase productivity during the 1980s, American enterprise plans to spend between a half to two-thirds of a trillion dollars on productivity enhancing capital goods. These investments will be very unevenly distributed across the four sectors of our economy, with no increased capital investment expected in agriculture. Indeed, the Agriculture Department has issued some studies that said even if American farmers didn't buy one more piece of capital equipment between now and the end of the century, productivity in agriculture wouldn't go down, and for good reason. They are already the most heavily capitalized sector in our economy.

Each and every worker in the U.S. agricultural sector is supported by, depending on whose studies you believe, $55,000 to $85,000 worth of productivity enhancing capital goods: reapers, binders, combines, centralized milking systems, etc. A quarter of all the nation's farms have computers. Only about 16 percent of the businesses have computers. Just 15 percent of the total operating costs of agriculture are for wages and benefits to workers. These guys are really heavily capitalized.

The industrial sector is also pretty heavily capitalized. Each and every worker there has $25,000 to $35,000 worth of productivity enhancing capital goods. That amount is expected to rise an average of $10,000 per worker during this decade; a total investment of $150 to $180

billion. Indeed, we have heard a lot about how high tech is going to rescue us from the problems of foreign competition, declining productivity, and the seedy quality of American goods, et cetera. And indeed, so far, in this decade, they have spent in the industrial sector, exactly half of what they thought they would in 1981; about $93 billion for all industries, and about $45 billion in the auto industry alone.

Wonderful results are coming from these investments: increased quality, increased productivity, and the elimination of costly industrial workers. Indeed, in the United States over the last 12 years, the number of middle income jobs has fallen every single year. Average real household income in the United States has fallen for 13 straight years. It is now almost 10 percent lower than it was back in 1973. As a nation, we have largely done this to ourselves. Why have we done it? Because we need to increase productivity.

Now, the service sector is not so heavily capitalized, $5,500 to $6,500 per person. This is going to increase about $2,000 a year, a total investment of $60 to $70 billion. Then, we get to your sector: the information sector.

30 YEARS OF INNOVATION IN INFORMATION HANDLING

The first thing we notice is that the information sector is the least heavily capitalized in the country: for each and every worker, only $2,000 to $2,500 worth of

productivity enhancing capital goods. Think of your own work station. When you go back to work at the end of this conference, what are you going to walk into? A desk? A chair? A waste basket? Telephone? A pocket calculator that you probably bought yourself. And access to a photocopier that works once in a while. That's it! You are totally capitalized information workers; right?

Now, if we look down the road during this decade, America's employers plan to spend $300 to $400 billion on information automation, swamping the amounts we plan to spend on automation in the service and industrial sectors. This is where the rally big capital investment is going to be! Now, keeping those big investments in mind, lets take a look at the projections of job growth for the next ten years. The Labor Department always issues two sets of forecasts. On the one hand they tell us what the fastest growing jobs are going to be. Computer technicians, 96 percent growth. Systems analysts, 85 percent growth. Programmers, 76 percent growth. Computer operators, 75 percent growth.

But how many systems analysts are there in the country today? About 45,000. If we get an 85 percent increase in systems analysts, we have 38,000 or 39,000 new jobs over a ten year period.

On the other hand, the Bureau of Labor Statistics' forecasts also tell us how many jobs will be created in those

job categories that will have the greatest amount of growth, instead of the fastest rate of growth. Here we find: building custodians, 779,000; 22 times the number of systems analysts. Cashiers, 744,000. Secretaries, 700,000. Office clerks, 696,000. Wait a minute. We're going to spend all this money on information automation, $300 to $400 billion. How come we are going to have this growth in clerical work? That was the whole idea of information automation; right? We were going to get rid of all those clerical people that clutter up the office. Instead, all the technicians and supervisors and the analysts and the staff people would have their own terminals and they could send messages to one another and keep all their files electronically.

Well, it will happen, but not within the working life-time of anyone in this room. The fact of the matter is that, from historical examples of previous economic times, we know that it takes 30 to 40 years to fully assimilate a new productive technology into ongoing, main-line enterprises. And we are only about five to ten years into this revolution. We have a long way to go. This means that from now on, throughout the rest of your careers, you will experience a constant stream of innovation, new systems, upgrading old systems, et cetera. Meanwhile, during the next 10 years, the $300 to $400 billion that people at the beginning of this decade thought would put terminals on everyone's desk is going

to be spent on the creation of an information infrastructure.

When we became an industrial economy, we didn't put our initial investments in end-use machinery. First we had to build the industrial infrastructure -- railroads, highways, canals -- in order to get the raw materials into production centers and the finished goods out into the marketplace. In the 1980s, most of this $300 to $400 billion is going into the information infrastructure, or "infostructure," as you will hear more people calling it. This will include millions of miles of fiber-optic cable, satellite dishes and communication satellites, data bases, networks, expert systems et cetera. These things have to be put into place before such end-use devices as desk top computers and terminals will have great productive, purposeful power. Thus, most of this investment in information technology will not eliminate many clerks and secretaries.

AN AVALANCHE OF INFORMATION PRODUCTS AND SERVICES

Another reason why there will be a continued growth in the demand for clerical workers is that they are already the largest group of workers in our society; over one-fifth of all the workers in America are clerks and secretaries, 22 percent roughly. So, when we see these large numbers of projected new clerical jobs, it is just a small percentage growth rate of the huge pool of clerical employees who are the

rank and file base workers of an information economy. In fact, the fastest growing businesses in our economy today, in terms of new wage income generated, are in the information sector. They are the producers, however, not of computers or other high-tech gear, but of information products and services. This includes the people who take data bases -- such as Census Bureau data -- and turn them into valuable end-use information for marketing, fund-raising, urban planning, etc.

Software production is another rapidly-growing information business. Now, most people assume that producing software principally requires lots of programmers, and not lots of clerical workers. But, research from the National Science Foundation tells us what the principal costs of software are, and it turns out that programming -- i.e. the coding and revision of codes -- is only a small share of software costs. The principal costs of software are for gathering the information about the process that you want to replicate in the software, plus the analysis and systemization of that information. This is done by practitioners, systems analysts, and subject matter experts, and it is a hugely labor intensive process requiring -- among other things -- a lot of clerical support.

Another major information-producing enterprise is also the fastest growing business in America's industrial

sector today: publishing. In 1970, for example, there were only 1,500 nationally distributed newsletters that made profits for the owners. Today there are over 6,500. There are more than one million different individual periodical publications in the world today. Most of them are still on paper. As I mentioned a moment ago, we are on our way to a paperless information economy, but it is still a long way off. Between now and the end of this century, paper will continue to be the principal medium for the storage and retrieval of information.

CHANGING AND LEARNING: EDUCATION BECOMES AMERICA'S LARGEST INDUSTRY

While we are on the subject of automating information -- in fact, automating everything -- one of the lessons that we have learned from experience as a result of the first five years of the massive expenditures on automation in the United States is that, in order to realize the full productivity-enhancing potential of new workplace technology, it is necessary to invest one dollar in employee training for every dollar spent on new technology.

The National Science Foundation had found that out in the 1970s. Their studies showed that, during the first 5 years following the automation of any productive activity, whether it is on the factory floor or in the office, when you tally up all of the expenditures, here's how the costs for

automation break down: Ten percent of the cost is for the hardware, 40 percent is for the software, and 50 percent of the cost of automating any operation is training the employees to use the new hardware and software. What is more, most employers typically only budget about 20 percent for training employees to use their new automated systems. This means that when they begin to work with new productive technologies, employees characteristically have less than half of the training they really need in order to have a real mastery of their new equipment, and thus get the maximum yield out of the technologic innovation.

So, productivity doesn't go up, and management tears its hair. They run out and hire a consultant, who, because the problem is so common, already has a preset report in his word processor that says "You didn't train these people enough."

Then they go out and do remedial training. What happens? Well, very often the relationship between the workers and management at this point has been poisoned by all of the conflicting accusations as to why the new technology didn't work well. As a result, remedial training under situations like this typically has an almost flat learning curve.

On the other hand, the evidence is that if management actually started out in the first place and provided the right

amount of training in the first place, you would get the yield you are supposed to get. Everybody would be happy. But then, nobody really wants to believe that training is half the cost of automation. Certainly the vendors who try to peddle information systems to your organizations aren't going to walk in the door and say, "Boy, have I got half a solution for you guys." And if anybody asks them about training, of course, they will say, "Listen, there's a self-training routine on this system that is so slick anyone can learn to use it in 4 hours."

Right? All nonsense.

In any event, the fact of the matter is that we are eliminating tens of millions of jobs in pursuit of a long-term vision that says we must increase the productivity of our very costly labor in this country in order for us to compete in a global marketplace that confronts us with a rising tide of skilled, low-cost Third World labor. In order to do this, we are going to have to put a lot of money into the automation of all work. This includes information work. The overhead of management work feeding into industrial production is such that about a third of all the workers in the U.S. industrial sector are information workers, so everybody understands that, across the board, we have to automate information work as well as automating factory operations.

So, over the near-term future, we have to deal with

the realities of what we are doing to ourselves. We are eliminating tens of millions of middle class jobs, and we are committing ourselves to retrain those displaced workers as well as training people to work with all this new workplace technology. As a consequence of this techno-economic revolution, education and training is about to become the largest industry in America. It is already our second largest industry and it has been since 1973 when it passed construction and homebuilding and moved into second place. Now it is about to pass medicine and health care and move into first place. We have got a new baby boom to school; we have got a lot of topped-out baby boomers caught in mid-career compaction who have to start new careers or learn new skills in order to get promoted. We've got to retrain the workers that are losing their jobs because of foreign competition and automation, and the biggest piece of all, we must retrain on-board employees to work with new electronic tools.

MOBILIZING KNOWLEDGE IN THE ELECTRONIC AGE

In fact, the data suggests that employer training budgets will have to double over the current ten-year period in order to cope with all of this. But, if we take a look at expert testimony before Congress on the problem of all these people losing their jobs, what have they said? "Listen, we don't have enough money to retrain a quarter of our work force in the old fashioned way, in classrooms with teachers and

textbooks. We are going to have to use computers, and automated teaching systems in order to retrain all these people!"

When we look at the projected growth of the PC software markets, it is estimated that PC programs will represent a $12 billion business by 1990, and of that, the biggest single piece will be for education and training, 20 percent of the total budget, $2.4 billion. Total textbook sales in America is less than $2 billion. So we are going to surpass the textbook industry. It took us 200 years to get to a $2 billion-a-year textbook industry; but it is going to take us only ten years to get to a $2 billion-a-year educational software industry.

The next major element here is health care, 15 percent of that PC software market already. The Department of Health, Education and Welfare, Public Health Service over at NIH, publishes a free newsletter called "Healthfinder" just to keep track of the 50 to 100 new health promotion software packages that come out every month. There are already 3,500 to 4,000 on the market.

There is another newsletter published by the Association for Computers and Communications Applications in Public Health. These guys list not only software packages but meetings and newsletters, plus special interest groups and electronic conferencing situations. This newsletter is the

core of an information network that involves both print media and electronic media of all kinds. On one page from one of their recent newsletters, they talk about, "The National Library of Medicine, which has developed a user-friendly approach to electronically searching Med-Line and Cat-Line called the 'Grateful Med.' This software communicates between your computer and the National Library of Medicine data bases, so that you can conduct literature searches."

On the same page of the CCAPH newsletter, there is also a reference to the Georgetown University School of Nursing's new Microcomputer Course; a medical microcomputer users' group that has a title three pages long; plus, a new newsletter about "the explosion of different kinds of media" which observes that "as you apply the media to new subjects, you have a lot of new subgroups." Now you'll remember that I started out by saying that the central task of modern management is to manage complexity. But, one of the problems is that the information sciences will actually add to modern complexity if you have no orderly structure for organizing and utilizing all that knowledge that is coming out on all kinds of media.

Your budgets, of course, aren't getting any bigger to help you manage all this new information.

Libraries are in the same boat as the rest of the Federal sector. Even if it weren't for Gramm-Rudman, even if

Reagan weren't in the White House, it would make no difference. Our old, labor-intensive industrial economy is devolving. Household income has fallen for over 10 years. It will continue to fall for another 10. History tells us that whenever you go through a techno-economic transition, the initial half of that 30-to-40-year period is one of declining economic prosperity, with diminishing discretionary income. At the same time, all productive enterprises will be forced to divert the bulk of their surplus funds into capital investment and worker training, so there will be even less discretionary income in the economy than there would be in normal times.

So, all of us are going to have to "do more with less." Whats more, we are to have to do it at a time when all of us will be confronted by rampant innovation. Computer games, which people used to take rather lightly, are now serious. They teach things like moderate drinking, safety, effective driving, and how to use thinking skills in decision situations. Even the OXFORD DICTIONARY has announced that it is now going to be coming with a computerized edition.

Simon and Schuster, a book publisher, is now going to market video cassettes, and -- ah, yes, one of my favorites, a graph that spells great difficulty for my former employer, the IRS.

In 1970, after falling steadily for 100 years, the number of self-employed in America turned around and started

to grow again. By the end of the 1970s, the self-employed were increasing four to five times faster than the salaried work force. Since the tax compliance rates of the self-employed are much lower than those of salaried workers, the IRS scampered down the street to the Bureau of Labor Statistics and said, "Quick, tell us, who the hell are these people?"

ENTREPRENEURS AND HOME-WORKERS DISPERSE INFORMATION PRODUCTION

What did they find? Well, they found technical editors, graphic illustrators, commercial scholars and researchers, software writers, and consultants. These are all information entrepreneurs. Suddenly, it became clear that the numbers of self-employment had fallen during the industrial era for the simple reason that self-employment doesn't lend itself well to industrial production. You can't have a mom and pop steel mill. Or a friendly, neighborhood oil refinery.

But you can open an information "refinery" in the garage or an electronic publishing outfit in the basement, and that is what is happening. Current data show that 7 percent of us were self-employed in 1970; it is 8.5 percent today, and the IRS forecasts that it is going to be at least 10 percent by 1990, and at least 15 percent of us will be self-employed by the year 2000.

Today, of course, you don't have to be self-employed to work out of your home. As information employment has grown, we find that "flex-place" or salaried work in the home is skyrocketing in popularity.

The current rise of salaried work in the home is being driven by a confluence of demographic, economic and technologic forces for change. In the first place, we have a falling entry level labor pool. The number of 16-to-24 year

olds in the U.S. is going to decline by about a third; because of the low birth rates from 1958 to 1976, we are going to have declining young adults from 1978 to 1996.

This shortfall means that there are "Help Wanted" signs everywhere, and the pay for unskilled jobs is going up. Now, how we are going to make up a shortfall of almost 15 million people in the work force? Well, you have to hire people who are not employed. The largest under-employed group in our society is women. Women made up 55 out of every 100 new hires during the 1970s, which increased their share of the work force from 37.5 to 43 percent. But beginning in 1981, the number of women went up to 60 of every 100 new hires. By 1983, it was 65 of every 100 new hires. Last year, 70 of every 100 new hires in America were women, and as a consequence, women now make up 45% of the work force. Given current trends, women will represent 46.5% of all workers by 1990, and 50% by the year 2000.

While entry-level income has been rising in recent years, as has already been mentioned, general per capita income in the U.S. has been falling for over a decade. In order for households to maintain middle class lifestyles in such a situation, what have they done? They have doubled up on the number of wage earners per household. As a consequence of which, there is even further incentive for rising numbers of working women, at the same time that the Baby Boomers, now

reaching the end of their childbearing years, find themselves in a situation where they have got to "fish or cut bait." And, since 1978, birth rates have been rising 25 percent a year among women aged 35 to 44 -- the last ten years of the childbearing span -- so we know that the "Baby Boom Echo" is now under way.

Thus, we have a rise in the number of working women at the same time as we have a rise in the birth rates, and that means the numbers of working mothers are going up. Today 52 percent of all married couples both work full time; among white collar and salaried professionals, it's 71 percent. Given current increases in marriage and birth rates, by 1990, somewhere between 55 and 60 percent of all the workers in America will have at least one child at home under the age of 18 with no adult supervision.

Suddenly, work at home by electronic terminal has become not merely an attractive option; for a growing number of people, it is also becoming a necessity. In 1981 there were 300,000 flex-place workers. Today there are over 2 million. The expectation is that 5 percent of the salaried work force will be working out of their homes by the end of this decade, and 10 percent by 1995, and up to 15 percent by the year 2000.

Now, you add that to the number of self-employed people, and it says a quarter to a third of all gainful

employment will be done in the home by the year 2000, and most of that will be information work.

LIBRARIES AS SOCIAL TECHNOLOGIES

Now, what does all this mean as far as libraries are concerned? Basically, libraries will be faced with the same realities that will confront all institutions. You will be faced with an avalanche of technologic innovations. You will be faced with austere operating budgets. In fact, given the continued devolution of our old economic system, it is not unlikely that some of you may be faced with the requirement of demonstrating your tangible contributions to the organization you serve in order to justify your continued existence. In light of these daunting circumstances, how might special libraries take purposeful control of their own destinies?

The last item in your handout is an article which I wrote for the July, 1986 issue of the PAPER INDUSTRY MANAGEMENT ASSOCIATION JOURNAL. In this paper, I summarize what we understand about technology and productivity. The first thing we understand is that there are two kinds of technology. There is hard technology -- computers, extruding machines, turret lathes, automobiles, etc. -- and there are soft technologies, which are also called social technologies or institutions. Social technologies are the way we arrange money, information and people, as opposed to physical or hard

technologies, which are the way we arrange physical resources.

It turns out that the greatest yield from hard technology comes from inventing new soft technologies: new organizational forms, new institutional systems, and new workplace arrangements that permit you to exploit the fullest productive potential of new physical technologies. When we see, for instance, the rise of work in the home, and when we see the rise of electronic expert systems, we should be saying "Ah, we always knew that we could poll experts and get good judgments, but it always took so much time to find the experts, and survey them. And in some esoteric, specialized fields, the experts are scattered all over the world."

"But now we have electronic computer conferencing systems, and suddenly we can ask all the world's outstanding salt water limnologists, for example, a question that only salt water limnologists can answer, and we can get their collective responses back in 24 hours."

Now, who would be the most appropriate provider of this sort of expert information? Since the mobilization of such external input spans across the vertical and horizontal compartmentalizations by which we accumulate the taxonomic structures of general knowledge, libraries would be the most appropriate suppliers of such services. A single electronic network, could be shared by all special libraries in providing on-line expert systems to their agencies. In this manner,

libraries could serve as efficient sources of the external inputs which -- as I mentioned at the beginning of my remarks -- will be crucial to correcting the erroneous assumptions that cause most bad plans and decisions.

INTELLECTUAL CAPITAL AND LIBRARIES OF THE FUTURE

Of course, as we move through 30 years of evolving information automation, the optimal library will clearly change radically from what it is today. As librarians explore applications of new technology over the next 10, 15, 20, 30 years, they are going to be inventing the libraries of the future. Basically, the libraries of the future will have to be built on the "intellectual capital" of those who are currently experts in the operation of libraries.

Now, what is intellectual capital? This is what the economists have finally concluded that they would call the experience-based skills and knowledge that people learn on the job and carry around with them in their heads. Intellectual capital is the source of more than half of the value added by any productive activity. Most important of all, intellectual capital is the crucial ingredient of good applications software.

Systems analysts interview real world practitioners to find out how they do their jobs, and then go back and tell their programmers, "This is what so-and-so does, so write the

code that says that!"

Your intellectual capital, as practitioners of your profession, will serve as the basis for the integrated, automated information systems that we will call libraries, and the online expert systems that will be provided through libraries.

I have one last transparency. It is in your handout, and it's a little challenge for you. We all go to professional and technical meetings where we hear enlightening speakers and get some really insightful ideas and maybe see some useful products that inspire us to go back to the office and change the world. And then we get back and there's a stack of stuff on the desk and everybody is acting like it's business as usual anyway and I'm already late for half a dozen deadlines...so... all that good intention is swept away.

Now the problem with this painfully common reality is that the only purpose for going to these meetings and hearing people talk about the future and what you need to do is so that you can take the expert knowledge you pick up at this professional meeting and go back and act on it! It would have done humankind precious little good for Noah to have had advance knowledge of the flood if he hadn't gone home and built the ark! And I'm telling you that a flood of change is coming.

ACTION AND LEADERSHIP: THE CRUCIAL COMMITMENT

And so I leave you, on this last page, with three alternative commitments to action. Now I recognize that it's not easy to take action in a large organization. And for a person to commit themselves honestly to take substantive action is almost heroic, because institutions don't like to change. We all recognize that organizations are gridlocks waiting to happen.

So, I'm going to give you three possible alternative commitments to take action. One is a commitment to an action that you know you will take as soon as you return to work. All right, maybe that's a little direct; a little too heroic. So we've got another alternative; a proposed action that you will actively promote when you get back. You know, go to your boss, go to your peers, and say, "Listen, I've got this great idea," or "I heard about this," or "Why don't we subscribe to this publication?" et cetera. Of course, even that may be heroic in some enterprises which are not very change-prone.

So there's a third commitment you might make, a commitment to undertake an exploratory activity, an information request, a research effort, a study proposal, whose purpose would be to gather, create or generate information that would help you and your organization to make a decision to take concrete action.

But you just can't keep going to professional

meetings and hearing about the future and hearing about innovation and then going back to business as usual. Otherwise, nothing will happen. That's the big risk for all of us.

In all the history of the world, never once has the nation that was dominant during one techno-economic era remained dominant in the succeeding era. Successful nations and successful enterprises are always fat and happy; they have the bulk of the market and most of the resources. Oh yes, we took a little cut here, a little there, that's all right. Being number one means you don't have much incentive to innovate; to take the risks that are necessarily associated with change.

Now you know that the demands for your services are not going to go away. You can be reasonably confident you are not going to get much more money to meet those demands. The only way that you're going to be able to be master of your own fate is to innovate, to go back there and to begin to do more with less, to really do tangibly different things, to mobilize resources, to use the innovations and the proven best new practices that are coming along in library sciences and information science, to actually improve your performance and demonstrate this crucial value you have to the organization, and the new values that you can create.

That's going to be a lot of hard work. But to be

the master of your own destiny, instead of just going with the flow, the game is clearly worth the candle.

So go out and build yourself -- and the organizations you serve -- a better future.

"FACTORS RELATED TO A NATIONAL INFORMATION POLICY"

BY MELVIN S. DAY

All of us recognize that the most constant condition in the world in which we live and work is change. This morning Mr. Snyder articulated so very effectively that the information world itself is dynamic and ever changing. Roles are changing. Responsibilities are changing. Players are changing. The supply of available capital to finance improvements and expansion is changing. Government policies are changing. The relationship between governments is changing.

And faster than all of this, technology is changing. In the ebb and flow of our daily living, we do adapt and adjust quite well as individuals. However, our current records, as a nation, have been alarmingly poor in responding in the new information age to the very real challenge to our world leadership role in the information field.

Perhaps in the rush of everyday activities, our concern has been for the problems in the world around us such as domestic politics, international relations, hunger, the state of the economy, new tax legislation, drugs, AIDS, and terrorism. As a result, we have not been as sensitive as we might have been to the scope, the shape, and the consequences of the historical shift in the world from the industrial age in which our nation flourished to the information age with its

many unknowns, as well as considerable potential for even greater good.

As a nation, we have been a big smug and perhaps with some justification. After all, we are a world superpower and leader of the free world. We have the highest standard of living of any nation in the history of man. We have an unequaled record of generosity, sharing much of our capabilities and resources with other nations, large and small.

Our ability to work together and successfully address problems and adversities is legend. We are a nation of doers and have been responsible for much of the phenomenal development in the electronic, communications and information technologies.

Our government and our private sector, working together to serve in the best possible manner the public interest, have given us information products, services and problems that are the envy of the world.

Competition, innovation and risk taking have been the engines of our progress and success. The stimuli engendered by competition is a key to our free enterprise capitalist system. Competition makes us run faster, jump higher, and occasionally even do the impossible. In the past, we have excelled in a competitive environment and I am confident that in a fair fight we will prevail.

However, the winds of change are blowing strongly and our failure to be alert and react effectively to these changes could be very costly.

The new element is the involvement in Europe and Japan of governments with new and substantial support for their national and private sector information programs. They, much more than we, have both recognized and assessed the extraordinary potential for dominance in the transition from an industrial age to an information age.

What's more, as a matter of national policy, they are determined to be the dominant powers of the information age. They fully intend to beat us at our own game with our own tools. They have learned well the need for national planning and policy formulation, as critical prerequisites for decision making and commitment of resources.

For example, Japan has prepared a national plan with supporting codification of policies and implementation schedules for its national information program, with major provision for attaining international pre-eminence.

In Europe, the Federal Republic of Germany and France have prepared their own national plans and national policy documents. In addition, the European Community (EC) has been working on information plans for years to gain European dominance in the information age. The European Community is providing significant support to major new

information developments in its member countries, in order to leapfrog U.S. developments.

You will note that as a first step, planning and policy formulation have been developed on a national level in order to gain the optimum impact of the nation's existing and planned information capabilities. In each case, national policy formulation was and is a clear statement of national commitment.

In the meantime, here in the United States, there has been no apparent movement at the highest levels of government to respond in a coherent and effective manner to these challenges, as well as to the opportunities of the information age. In our Executive Branch of government, it has been business as usual in the matter of national policy and planning while at the same time, in the Legislative Branch, there has been some stirring but no action. I will expand shortly on this congressional stirring.

Lest you leave with a mistaken notion that no one in the Administration has any knowledge or appreciation of our transition into the information age, I must share with you the words of a man who stands fourth in line of succession to the presidency of our country.

Secretary of State Shultz, in an address before the Stanford University Alumni Association's first international conference, held in Paris, March 21, 1986, spoke about the

"Shape, Scope and Consequences of the Age of Information": [1]

"Today the information revolution is undermining their ancient dictates [i.e., the dictates of nations]. It is shifting the balance of wealth and strength among nations, challenging established institutions and values, and redefining the agenda of political discourse.

"The information revolution promises to change the routine of our planet as decisively as did the industrial revolution of the past century. The industrial age is now ending....Today, we remain agriculturally and industrially productive; but the basis of our economy is shifting rapidly from industrial production to information-based goods and services. Our economic indices -- such as productivity and the structure of employment -- are being decisively altered by our entry into the new age.

"Yet these changes have been so pervasive, and their pace so rapid, that we have been unable to comprehend them in their full scope. We are very much like the leaders of the early 19th century as they tried to grasp the unfolding consequences of industrialization. No one has taken the full measure of our own new age. But if we are to seize the opportunities and understand the problems that this new phase of technological transformation will bring, we must try to grasp both its particulars and its broad outlines."

This, my friends, is an articulate, factual statement by a senior member of the Administration. But by one, I fear, who because of the nature and burden of his duties is not in a position either to lead or stimulate concerted or effective action in developing an integrated set of national goals, a national plan, and national policies for the information age.

Inaction in this area and belated reaction to crises appears to be the modus operandi. But then again, this has been the way of all recent national administrations, Republican and Democrat, in matters pertaining to information and libraries.

My view, I realize, is a serious indictment of our lack of concern and foresight. But at the same time, it is a view tempered with a full realization that, as Americans, we have an inherent fear of national government, centralized planning, and policy formulation which might influence even remotely, our basic freedom.

Here in the United States, ours is a society in which the people are the masters of government with the government's role being to serve the people. The government's overriding consideration is how best to serve the public good. With this, then, as a given, the responsibility for national leadership does rest with the government.

I must acknowledge that the government's ability to carry out that role successfully has been limited from time to

time by the very nature of the system that gives it its strength. Ours is a society that jealously guards its freedom and both fears and resists government influence. Ours is a society that will defend to the death any perceived threat to its First Amendment rights.

As a result, ours is a society that is suspicious of government involvement and information program. While this fear primarily concerns free speech, control of the media, and communications, the tentacles of that fear do manage to touch other information, as well as education programs. We shy away from a planned society. In fact, national planning is an anathema to most Americans. We abhor centralized control by government.

As Americans, we really do not want to be told what to do or what not to do. Nevertheless, we do have national information policies. And I repeat that. We do have national information policies, admittedly, a hodge-podge of information policies from both our Legislative and Executive branches of government.

The statutory authority for all government programs comes from the Congress of the United States, our government's largest deliberative and policy making body. Such authority has concerned and impacted on virtually every phase and facet of the information and library fields. And since Congressional actions usually become law or have the force of law they, in

effect, do set national policies.

Robert Chartrand, of the Congressional Research Service of the Library of Congress, in his paper entitled "The Politics of Information" [2], discusses the ledger of legislation passed during four recent Congresses. He reports that more than 200 public laws of interest to the information field were enacted during the 95th, 96th, 97th and 98th Congresses, covering:

a) Dissemination of information

b) Information inventories, programs or clearinghouses

c) New information systems or computerized databases

d) Government records, documents, and paperwork reduction

e) Information disclosure and the right of privacy

f) Telecommunications, broadcasting and satellite transmissions

g) Library policies, assistance and procedures.

In addition, during the current Congress, the 99th, 597 bills and resolutions were introduced into the House and Senate dealing with information policy broadly interpreted as -- and I quote -- "Societal and institutional decisions concerning the allocation of resources to the acquisition, processing, distribution and use of information."

In the last five Congresses, there's been no central

rally point within the Congress to coordinate information policy concerns. Each committee and subcommittee in the House and Senate addresses the information and information related matters solely with its own importance but limited frame of reference and not within the frame of an overall national strategy or blueprint.

The closest the Congress comes, in the present Congressional session, to addressing some limited strategic concerns of the information age, is a Senate Bill, S-786, to establish an information age commission. This bill has been introduced by Senators Nunn and Faltenberg.

Section 3 of the bill states:

"The purposes of the act are to:

1) create a forum for discussions and targeted research on the present and future impact of computer and communication systems on our Nation and its citizens; and

2) present critical alternative views and choices to the President, the Congress, and the public generally, so that such views and choices may serve as a catalyst for change, if necessary, and maximize the benefits of the Information Age to our society."

The prognosis on Capitol Hill is that there will be no action by the Congress on this bill this session. In view of the fact that the Congress has gone home, that's probably true.

While admittedly, the bill falls far short in many areas, it does represent a shared sense of the importance of national consideration of issues related to the information age.

Now in the Executive Branch of government, as mentioned earlier, there is no movement to consider, study or draft for consideration a national information plan, strategy or set of integrated policy statements. Each department and agency does its own thing within the authority vested in it by its statutory legislation. And each develops policies for its own implementation within the confines of its own parochial interests.

Still, the operating departments and agencies do develop and establish national policies in the information area even though this may not have been their intention. Government agencies institute procedures and develop policies for themselves. But because of the size and continually expanding impact of government programs on a non-federal area, they often become unofficial, but at the same time de facto national policies.

The only Government office with current responsibility and authority to set information policy across the Executive Branch of Government is the Office of Management and Budget. Its on again, off again efforts in this area over the past five years to produce an omnibus OBM Circular on

information programs finally seems to have born fruit with the issuance on December 12, 1985 by OMB of its new Information Circular A-130, entitled "Management of Information Resources."

The new circular supersedes A-71, 90, 108 and 121 and because of its comprehensiveness, merits careful examination by the entire information community, both inside and outside the Federal Government. The impact of this circular will reach far beyond the confines of the Federal Government, and is but an example of how Federal policy can affect national policy.

Certainly no discussion of policy issues and programs of importance to the information community would be complete without due mention of the National Commission on Libraries and Information Science, NCLIS. NCLIS was established 15 years ago to advise both the President and the Congress on the nation's library and information needs and our policies and plans to meet those needs. The scope of its charge is quite broad and it has issued studies, recommendations and resolutions on a wide range of topics.

In the 15 years of its existence, it has never received an appropriation equal to its initial authorization granted by the Congress for its first year of operation. More recently, NCLIS has had to struggle just to get sufficient funds to survive. Still, it has continued as the only body within the Federal Government structure to look broadly at

national issues and to advise the Congress and the President.

Its terms of reference, as broad as they seem to the library and information community, of which we are a part, do not cover in depth other areas of major importance to the information age, such as electronic technologies. Hence, they have been but a piece of the pie.

With minimal resources and no real authority, the Commission's efforts to influence national policy is greatly limited.

Why, you may ask, have I spent so much time providing this background information? It seems to me that if one is to give serious consideration to the question of elements of national information policy, one must be familiar with and understand the real life environment within which such information policies would be developed. The environment I have just described is American as apple pie and it will determine to a great extent, how we will address the challenge of information formulation in the information age.

Traditionally, Americans have shied away from centralized national planning within the Government structure and especially so in the information area. Our smorgasbord of de facto national policies, some of which are inconsistent and even contradictory, continue to grow and no doubt will increase the confusion quotients.

There are some who feel that a more rational approach

to policy making is in order. On the other hand, I should point out there are those who still argue that if it isn't broke, don't fix it. I believe that both groups would agree that it probably would not hurt if the Federal Government exercised its leadership role by convening the best minds inside and outside the Federal Government, to draw up a unified set of national goals, for the information field, as a framework within which future policies by the Government could be promulgated.

In addition, the goals could also provide the framework within which legislation and administration of Government and Government related programs could take place, in a more consistent, a more rationale, and a more effective manner. Certainly, care would have to be taken to avoid excessive structure and guidance which might lead to unwanted yokes and barriers.

For the first time, we would have a formal statement of a national strategy, which should be a mandatory prerequisite to any formal consideration of national planning and policy formulation. Our past failure to do so is reflected in the current state, or lack thereof, of national and rational information policy formulation here in the United States.

Fine, you may say, but how about a few words about the elements of national policies? My friends, there is no set recipe for the development of national policies, and

especially so in an information age in which changes are taking place at a constantly accelerating pace. Even with my own heavy involvement for more than 35 years in matters pertinent to national information policies, I would not presume as a single voice to propose a comprehensive set of basic elements of which U.S. national policies should be comprised.

Because of the many complexities and interests involved, such an endeavor will require the participation of not just one but a number of experienced experts in the pertinent technical, legal, and geopolitical matters, as well as participation by knowledgeable and articulate representatives of each of the many different communities involved, some with conflicting interests.

Certainly, I have my own views, and in such a forum, I would do my best to be a strong advocate. My voice would be but one of the many that should be heard. Even though at this time I may be side stepping the issue of an in-depth discussion of the elements of national policy, I would still like to share with you some thoughts about the "should's."

First of all, since a number of national plans have already been prepared by other countries, I suggest that they, together with corresponding national policy statements, be examined in detail. There is much to be learned from the substance, form and strategy of those documents. I am not

proposing that U.S. policies be similar in any way, but rather I am suggesting that the sum and substance of these documents cannot and should not be ignored. They do exist and they are the blueprints of actions of other countries, which are direct challengers to our own country.

I would also suggest that we take note of those elements of national policy each country has chosen to address. Here again, we might possibly uncover something of value in comparing our own list of elements of national policy.

Next, I would suggest a set of assumptions or guidelines be developed in connection with policy formulation. For example:

1) The policy document should consist of both policies and detailed sub-policies, because of the complexities involved and the all-encompassing nature of national information concerns.

2) The policy document should be drafted in a government setting but with the cooperation and major input from the private sector--(industry, professional societies and trade associations). Such cooperation would be tantamount to a sharing of power in the creation of national policies. Professional societies and trade associations would have to assume greater responsibility for representing, in policy formulation activities, the views and the interests of their

members.

3) The policies, although firm and pertinent at the time of formulation, should be "fluid" policies, and not set into concrete because of the dynamism and rapid changes inherent in the information age. Close and continual monitoring will be required of the policies and their implementation so that, as changes occur that warrant modifications of policies, the appropriate policy modifications can be made in order to ensure their continuing pertinence.

4) Agreement should be made between the Executive and Legislative Branches of Government that policies they both promulgate are within the framework of the overall national strategy and goals and do "jibe" with each other.

5) A National Commission of Information Counselors should be created, reporting to the President and the Congress, to advise the President and Congress. The Council would assess the effectiveness of U.S. national information policies in our country and abroad, as well as the impact of the information policies of other countries on the U.S.

Using this information, the Commission would recommend policies, and policy changes in order to ensure and maintain the U.S. leadership role in the Information Age. The Commission would review national information policies recommended by the Executive Branch agencies and the Congress and would submit its recommendations, as appropriate, to the

President or the Congress.

6) Executive Branch agencies, within their primary areas of legislative responsibility and within the requirements of the items above, should have responsibility for promulgating recommendations for national information policies. For example, in the international area, the State Department would have lead responsibility; in the energy area, the Department of Energy would have lead responsibility; in the health area, it would be the Public Health Service, and so forth. Within the Executive Branch, the Office of Management and Budget would have management responsibility for coordinating among Federal agencies the review and approval of recommended policies.

7) Security information, intelligence information, proprietary information, and information considered to be intellectual property and covered by copyright or patent law, should be treated differently from generally available information in the preceding five items.

I could go on and on but the clock says that my time has drawn to a close. Suffice to say that the items that I have just mentioned are but a scratch on the surface, but do provide to you, I hope, a feeling for some of the considerations that should be addressed.

In the new Information Age, the information field, of which all of us are a part, is of paramount importance. We Americans have a genius for organization and working together

to get things done. It would seem that now is the time early in the Information Age for some introspection and for some working together with the Federal Government to develop a national strategy, a set of national goals, and a coherent set of national policies, if we are to retain our position of world leadership in the information field.

In closing, I would like to recall for you the words of Secretary Schulz, which relate to one of our basic and one of our most important national information policies.

"So as we face the many challenges that the new information age presents, we must never lose sight of our most fundamental principles. Our policies must always be based on the fundamental process of freedom, freedom of thought, freedom of research and the free flow of ideas. If we keep it in mind, we will benefit from our dedication to liberty even as we secure it."

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[1] Schultz, George. THE SHAPE, SCOPE AND CONSEQUENCES OF THE AGE OF INFORMATION. Policy No. 111. Department of State, Bureau of Public Affairs. 1985.

[2] Chartrand, Robert L. THE POLITICS OF INFORMATION. Journal of the American Society for Information Service. November 1985, Vol. 26, no. 6.

"MANAGEMENT OF INFORMATION TECHNOLOGY IN THE FEDERAL SECTOR"

BY VINCENT DeSANTI

Let me say at the outset that my statements as a panelist are my own personal opinions and they don't necessarily reflect those of the Controller General or the General Accounting Office.

The General Accounting Office, as you know, is an agency of the Legislative Branch and GAO's mission, very broadly speaking, is to assist the Congress in its oversight of the Federal agencies. And in carrying out this mission, GAO focuses basically on accountability.

The audits we do are essentially to assess how well the federal agencies are running their programs, specifically whether these agencies are going to be fulfilling their financial, their managerial, their programmatic responsibilities, and whether they're really doing that efficiently, economically, effectively, and even legally.

GAO provides the Congress, and also the federal executive top management levels with information, conclusions and recommendations to basically help them manage better and make policy better.

In Fiscal '85, GAO realized almost $37 in savings in benefits to the taxpayers for every dollar it spends. So with an operating budget of $300 million, we saved about $11

billion in savings and cost avoidances.

Now last year GAO did some work at the Patent and Trademark Office. And it's very highly relevant, I think, to the theme of this conference and so I'd like to dwell just for a minute on the theme as a starting point for my comments that follow. When I first saw the theme, at first blush it sounded a little dramatic. I mean, you know, government information, and endangered resource of the electronic age.

And one can imagine that information is on the endangered species list, right up there with the hump-backed whale and the snail darter. And I suppose, if you really want to be cynical, you can have some fun with that. I mean, last year or a couple of years ago, the big information issue was transborder data flows, the foreign threat to transborder data flows, remember that?

And now it's government information that's endangered, and next year it will be something else, and so on. And it's kind of fun to be cynical, but if you really take a look at the theme of this conference and if you look a little deeper, I think you'll find it contains a really serious note which admonishes us to be vigilant.

The theme itself is kind of an oxymoron because the phrasing suggests some contradictory ideas here. Take, for instance, the phrase electronic age. Now the phrase, to me, suggests technological accomplishment in computers,

telecommunications, compact disks, electronic publishing and so forth. And these developments are all supposedly making government held information more accessible.

In a recent report by the House Committee on Government Operations, they even noted that. They said that "Agencies are making increasing use of modern computer and telecommunications technology to establish electronic data bases containing public information. These electronic information systems offer an opportunity to increase the efficiency of agency information activities, to make government information more widely available and to permit agencies and others to make better use of the data."

Well, if that's the case, then how is government information being endangered in the so-called electronic age? And the answer to this seeming contradiction lies in the fact that the technology of the electronic age is not the threat. Like money, technology is a neutral resource. It's neither good nor bad. It's the means of acquiring and the motives for using it that may be good or bad.

And so the danger to government information is not the technology of the electronic age but the manner in which that technology is being integrated into the culture of federal agencies.

The availability of electronic information dissemination systems affords the potential for misuse or

abuse. Such systems enable agencies to maintain a monopoly or copyright-like control over information in the public domain that directly affects the quality of life in a democratic society like ours.

And essentially, the problem is a sociological one. It's not a technological one. It's basically a problem of organizational behavior, to my way of thinking. And to illustrate this point, I'd like to consider what happened at the Patent and Trademark Office.

Now in 1981, by Congressional mandate, the Patent and Trademark Office, PTO, began planning the automation of its trademark operations. Several years later, the Chairman of the House Committee on Government Operations asked GAO to review PTO's automation efforts.

Now, when GAO went into this review, public access was not the issue. It wasn't even an objective of our review. We were following standard approaches to looking at how agencies implemented automated systems and public access just wasn't even a consideration.

The public access problem actually surfaced later as a side issue, during the course of our review, and eventually it took on greater significance in the publicity that followed after the release of our report, in April of 1985.

As part of its automation effort, PTO developed three automated systems really. The first was a search system

to search existing trademarks so that confusingly similar trademarks would not be registered. And the second was a monitoring system whereby they could monitor the status of trademark applications. And the third was a retrieval system to microfilm, retrieve, and print copies of PTO's original trademark documents.

Now two of the systems, the monitoring and the retrieval system, became operational in 1983 and 1984 respectively. But the search system was experiencing difficulty, owing to errors in the data. So it became necessary for PTO to supplement the system by manual searching.

However, PTO announced that it planned to eliminate the manual search facility as soon as the automated search system became fully operational. When GAO issued its report, in April of 1985, PTO had not yet specified when this automated system would become fully operational. But it was obvious that if PTO terminated manual searching, as announced, the public would not be allowed to use the automated search system to access the trademark data.

Now this restriction was the result of certain exchange agreements PTO entered into with three companies. Under the exchange agreements, PTO promised one, to furnish the companies free copies of the trademark data records for their commercial use. Two, to relinquish ownership of the data base and to restrict, thirdly, the public's access to

that data base.

Now, in return, the companies agreed to convert the hard copy trademarks data base to digital form and they agreed to continually provide PTO with updated versions for PTO's internal use in the automated trademark system at little or no cost to PTO.

Now on the surface that seems like a very clever deal.

In setting up these exchange agreements, however, PTO allegedly may have violated the FOIA, the Freedom of Information Act, and possibly the Copyright Act because, in effect, PTO was in effect exercising copyright-like control by denying the public access to an electronic data base which is in the public domain.

Now as a result of the hearings held after GAO issued its report, PTO -- by direction of the Secretary of Commerce -- began efforts to acquire unrestricted ownership of the trademarks data base and they began to try to work out a way to allow the public full use of the search capabilities of PTO's automated trademark system.

I don't know where they are, in that effort. I know they're having some difficulties with that. I also know that the three companies are not very happy about that and that effort, I believe, is still going on.

Now, what can we learn from the PTO experience? I

think that experience illustrates a number of problems that will arise when we rely on existing federal policies to guide us. And I think Mel Day's talk earlier really touched on the centrality of the problem. Federal policy is really an agglomeration of sometimes conflicting influences and advice and directions. And I think PTO is a situation where the interpretation of federal policies was part of the problem.

First of all, PTO did not adhere to existing Federal procurement regulations. These regulations require agencies to prepare a comprehensive requirements analysis before awarding a contract to acquire an ADP system. Such analysis would have included specifying search requirements for public users.

Had PTO taken steps early in the planning phase to consult with outside users, it's likely that many of the problems that were encountered could have been avoided entirely. But PTO evidently did not consider these users. If you look at their planning objectives, the major planning goals for the automation effort were simply to improve registration quality, to achieve more cost effectiveness, and to reduce application processing time.

Now these goals served PTO's internal needs but they neglected to accommodate PTO's public constituency. Further, PTO did not consider that the exchange agreements it entered into, for computerized data processing products and services, were subject to the Brooks Act and to related procurement

regulations. They felt that those exchange agreements were outside the Brooks Act. And if you recall the Brooks Act and other policies require that maximum practical competition be attained among offerers who can meet an agency's automation needs.

And this competition insures that agency needs are satisfied at the lowest overall cost, considering cost and other factors.

PTO's failure to comply with applicable procurement law and the consequences of that failure point up the need for continual monitoring of agency acquisitions of electronic information systems.

Now there's some weaknesses inherent in prevailing federal attitudes and policies and practices that also contributed to the problems. While PTO can be cited for failing to comply with certain laws and regulations, the fragmentation, the gaps, and some of the inconsistencies in existing federal information policies indirectly have contributed to the problem.

On the one hand you have government information policies such as the Copyright Act, the Freedom of Information Act, the Privacy Act, all of which attempt to prevent or discourage the government's exploitation of the power inherent in government information.

On the other hand, there are policies such as the

Brooks Act, the Paperwork Reduction Act, OMB Circular A-130, which tend to focus more on the costs and the availability of technology, and less on the impacts those technologies make or have on public access. So there's a slight difference in focus.

And when the acquisition and development of electronic information systems are driven only by considerations of cost and availability, you can have serious dysfunctions in the government's role of information dissemination. As in the case of PTO, automated systems development was intended first and foremost to meet the specific internal needs of that agency, rather than the broader purpose of keeping the public informed.

However, the pursuit of organizational efficiency through automation is not inappropriate. It's even desirable in the conventional sense of "information resources management, IRM." In this context, information technology policy is oriented to making federal agencies more productive, more efficient, more effective by applying ADP and telecommunications to decisionmaking.

I mean, the aim behind such policies is facilitating the conversion of data into reliable information and transmitting that information to decisionmakers in a timely, cost-effective manner. And in keeping with conventional wisdom PTO attempted to attain increased internal efficiency

at little or no cost by agreeing to restrict use of its database by outside users.

In effect, PTO traded away public access for the opportunity to acquire an automated trademarks database free of the cost of converting the data into computerized format. They were getting this tremendous automated system free; all they had to give away was the public's access to it. And by placing too much importance on saving money, PTO neglected its mission to serve the public.

Now another influence in the way agencies manage information technology, particularly the development of automated systems, is this national ideology we have about the marketplace and its role in policy development. For example, we are admonished not to compete with the private sector. OMB Circular A-130 is very explicit in discouraging agencies from duplicating information products and services that could be expected to be provided by the private sector.

However, in complying with this policy, PTO was perhaps too zealous. The steps taken by PTO, unfortunately, placed a higher priority on avoiding competition with the private sector than on fulfilling its public access and disclosure requirements. And as a result, PTO was eventually forced by public and Congressional pressure to find ways to remove its unreasonable restrictions on public access.

We can draw a few conclusions from this. I'd like

to just say that these are my own concluding remarks. Electronic information technology, I think, can indeed be used to broaden and improve public use of government information without undermining the protections inherent in government information policy.

However, because of the legal ambiguities, some of the competing requirements and some of the economic imperatives that exist in our information policies, I think the state of affairs allows agencies to exert greater control over information in electronic formats than is possible in traditional hard copy formats.

It was easy to make a xerox copy of a paper document, and once it was copied it was out in the public domain. It's much more difficult to take electronic databases and copy them. And it's much more difficult to make that available than in the traditional sense.

Now top level federal managers and policy makers must understand this problem. And when Mel Day was talking earlier about a commission for creating a framework for public policy, it sounded to me a little bit like the problems one has walking to the North Pole when the ice is beginning to thaw. It's just going to take a heroic effort.

Part of the problem is, top managers are very transitory people in the executive branch. Their tenure is 18 months to two years on average. So you have a high turnover

at the decisionmaking level that really needs to address these issues. And you don't get an awful lot of interest in information policy in the executive branch level, top level management.

So they need to understand that integrating new technology in bureaucratic environments really requires a reassessment of our existing policies, and requires new measures to ensure that government data in the public domain -- and by that I mean information compiled with taxpayer funds that's not classified, not sensitive, or exempt from public disclosure -- that that kind of information will remain freely accessible and easily reproducible, regardless of the format or the medium that it's maintained in.

To conclude, I'd like to say that the proper condition of technology in this electronic age is servitude. And whatever directions technology may take in the future, government must keep the machine in its proper relationship with people. It has to ensure that electronic information systems will be used to serve, not control us, and that people are, and must remain the controlling part in the man-machine interface.

We have to keep in mind that no matter how strongly our affairs are driven by technological developments in an electronic age, no system can be better than the people who run it. And the ineffective procedures and the misguided

intentions of groups or bureaucracies are only compounded and perpetuated in automated systems.

"RECENT INFORMATION STUDIES OF OTA"

BY PRISCILLA REGAN

I'd like to start by giving you a little bit of background on the Office of Technology Assessment, OTA. We are one of the four staff agencies of Congress; the others being the General Accounting Office, the Congressional Research Service, and the Congressional Budget Office. We are the smallest of the four. We are statutorily limited to a staff of, I think it's 130 -- it may be 140. But we're basically a small, analytical agency of Congress.

We conduct studies at the request of Congressional committees. When a Congressional committee puts a request in for a study, that then has to go to our Technology Assessment Board, which is composed of six representatives and six senators from both parties. So we have bipartisan, bicameral approval of our studies before we undertake them.

The studies we do are generally two years. These are long studies, although we do put out some tech memos and shorter pieces. In the longer studies, we analyze the implications of technology, and technological change on politics, on society, on economics, and we evaluate policy options that are available to Congress for addressing policy problems. We do not make recommendations. Instead we evaluate the policy options and then it is up to Congress to decide which of those options is the appropriate one to take.

OTA is divided into nine programs, including energy and materials; an industry, technology and employment; international security and commerce; biological applications; food and renewable resources; health; oceans and environment; science, education and transportation; and last but not least, communications and information technology. So we do a broad range of policy studies.

Recently the Communications and Information Technology Program, of which I am a part, has completed or is in the process of conducting a number of studies that at least in part are concerned with policy issues involving information dissemination and information management. What I'd like to do is briefly go through those studies and then later in the question and answer period you can ask more detailed questions.

One of the first studies that has come out in the last two years was "Automation of America's Offices." That study was released in December of 1985. In this study, OTA looked at the effects of office automation on office employment, information processing within and between organizations, the training and education of office workers, the quality of work life, office environment issues, and data security and confidentiality -- issues of data security and confidentiality that were arising because of the use of computers, especially microcomputers.

Another study that recently came out is "Intellectual

Property Rights in an Age of Electronic Information." This one was released in April of '86. The major finding of the study was that the existing intellectual property system, which is primarily based on patents, copyrights and trademarks, is challenged by the new technologies. The new technologies make possible an ease of copying, an ease of taping, and an ease of adding value to information or to a work. This raises the question of manipulating information in ways so that that information has then fundamentally changed. There is also a real question now in terms of what is, indeed, a creative work and when does that creative work stop, because it's often now the case that information is processed more than it is a final product. Then the question is how do you protect the work at any one stage within that process.

We also have three reports that were recently released from a large assessment that we did over the last couple of years. This assessment was on the implications of federal government information technology on civil liberties and Congressional oversight. This study was requested both by the House Committee on the Judiciary, Subcommittee on Courts, Civil Liberties, and the Administration of Justice and also by the Senate Committee on Governmental Affairs. There was a congressional concern with stepping back and looking at the implications of new technologies. Now that computers and telecommunications are being used in the federal government,

what are the policy implications for civil liberties and also for Congressional oversight and the relationship between the executive and legislative branches of government? This was a mammoth task, as you can imagine. And we broke it up into three parts.

The first part looked at "Electronic Surveillance and Civil Liberties." That report was released in October of '85. In this report we found that the privacy of new means of communications such as electronic mail are not protected under existing law. People often assume that they have certain protections, that there is privacy associated with phone or electronic mail communications. But, there are gaps in the law. The way that Title III is written -- Title III of the Omnibus Crime Control and Safe Streets Act -- it covers only wire and oral communication. This is the major statute that protects privacy of communications.

If Title III doesn't cover a particular type of communication, then the question is, does the Fourth Amendment apply and offer any additional protection. That question is resolved by the courts. OTA found that legal issues with respect to the privacy of electronic mail, cellular telephones, cordless telephones, and any kind of data communication were unsettled. This resulted in uncertainty on the part of both individuals, and on the part of the Justice Department or law enforcement officials, as well as on the part of people who

were marketing these products.

The OTA report came out in October, and just recently legislation was passed. The House passed an Electronic Communications Privacy Act in March or April. The Senate had been considering one and then in the last final two days of the 99th Congress passed a similar Electronic Communications Privacy Act. They sent it over to the House. The House passed the same measure so that a conference would not be necessary, and there is now a law on the books that will offer protection for these newer forms of communications, especially data communications.

Another part of this larger project on federal government information technology was titled "Management, Security and, Congressional Oversight" and was released in February of 1986. This report covered a number of issues: strategic planning; innovation; procurement, the question of the Brooks Act and how well the Brooks Act was working; information resource management, as a concept how is it working, what conflicts are appearing between information resource management and other values along the lines that Mr. DeSanti was talking about; information systems security; computer crime; information technology and decision support; management of government information dissemination; and opportunities that were available to Congress for using new information technology as a way of overseeing what was

happening in the executive agencies.

Following that report we released in July of '86 a report on "Electronic Records and Individual Privacy". The major finding of this report was that there was evolving a de facto national database containing information on most Americans, and that the use of the Social Security number as an electronic identifier was facilitating the creation of such a national database.

In this report we specifically looked at issues such as computer matching that is being used in federal programs to detect fraud, waste and abuse. In computer matching, conflicts appear between efficiency, and privacy and other values such as accountability of what is happening within administrative agencies.

This report also examined computerized front-end verification which is used at an application stage. When an individual applies for government benefits, or when an individual applies for employment, the information provided can be verified using a computer and data communications, to certify the accuracy of that information. However, whether one can verify the accuracy of that information depends on how accurate the information is in the other database that is being checked.

This report also looked at computer profiling. Computers can be used in either generating a profile of

individuals that may be of interest to an agency such as, drug couriers profiles, and also in searching through massive data sets and in manipulating that data to come out with a very sophisticated statistical profile. Computers can also then be used in searching through data banks to see who meets those profiles.

All of these applications of new technologies raised a number of issues with respect to not only the Privacy Act, but also constitutional due process rights, such as notice and the right to a hearing before benefits are terminated.

Our program has four studies in process right now. One, that was requested by both Representative Jack Brooks, Chairman of the House Committee on Government Operations, and Representative Don Edwards, Chairman of the Subcommittee on Civil and Constitutional Rights of the Committee on the Judiciary, is looking at new communication technologies and their implications for privacy and security. This study will probably be released as two reports.

One report will focus on worker or work monitoring which occurs because the more people are using microcomputers, the easier it then is to get detailed analyses of what people are doing by monitoring key strokes. The report will also touch upon, but not get centrally into, the whole issue of monitoring workers in general, including things such as drug testing and some of the policy issues that come about because

of that.

The second component of that study is the security and vulnerability of telecommunications systems. This will involve some work on the data encryption standard, and other means for providing for systems security, but will also look at some very interesting issues in terms of vulnerability of telecommunications systems. For example, what happens if the AT&T network goes completely down, and what would happen if there was a major blackout and information that we are completely dependent upon getting through the telecommunication system is just frozen? Not only what if it's frozen, but what if it was lost? Or what if somebody could change more information than the computer hackers have done, and changed information in a very fundamental way and across the board? What kind of protections do we have against that?

Another study we're working on right now is entitled "Technology, Public Policy and the Changing Nature of Federal Information Dissemination." This may be the study that you are most interested in. I am not working on this study, but I can tell you what they're doing.

They are looking at the effects of new information technologies -- including electronic document filing, computer-aided surveys, computerized databases, optical disks, electronic mail, electronic remote printing, and electronic bulletin boards -- on the public information functions of the

government. And they will also be looking at issues of public access, as that is one of the key issues about which the Congressional committees are concerned. I should mention that this study is jointly requested by the Joint Committee on Printing and by Representative English's Subcommittee on Government Information, Justice and Agriculture. Bob Gelman, who I think spoke to you yesterday, is the main staff person concerned with this study on the English subcommittee.

This study will look at issues of public access and at issues involving the conflicting roles of federal agencies in disseminating information. Issues of management efficiency and cost reduction, and the whole issue of the private sector cooperation and competition that Mr. DeSanti was talking about earlier, will also be examined.

Another one of our studies -- and this one I am working on -- is a review or a look at the "Communication System for an Information Age." This study is requested by Representative John Dingell of the House Energy and Commerce Committee. Basically what Congress is interested in is what is happening now that telecommunications, computers, and mass media are converging, and what are the political, social, and economic implications of this. Congress is interested in what these changes will mean for the existing regulatory framework that has been established, because we have treated each of those three sectors as being very different, and different

rules govern what goes on there. If those three technologies are merging, are those sectors of the economy merging, and from a policy standpoint, what are the options for dealing with these changes.

Another aspect that we are examining in this study is the international communication systems. There is a great deal of talk about an integrated services digital network, ISDN. Some kind of ISDN will arrive as a network architecture that is an international architecture. Certain decisions made now may preclude the ease of our being able to become a part of that integrated services digital network. The United States is not the only country which is faced with this problem. Every country is faced with it and every country is discussing that issue. Clearly a part of this whole study is that the communication system, the telecommunication system and, the mass media system are all becoming more international than they were before.

The last study, that has not been completely approved yet although it looks as though it will be approved shortly, is "Science, Technology and the Constitution in an Information Age." This study was requested by the House Judiciary Committee and is to complement other bicentennial activities that are going on. The question in this study is, given the science and technological changes that have occurred since 1787, how do they affect both the principles that we have in

the Constitution, and also the structure of government that we assumed would exist in the Constitution? Is it changing in radically, fundamental ways and do we need to maybe rethink some of those principles or that structure, or the way that we are dealing with science and technology?

"CONCLUSION"

BY STEVEN GOLDSPIEL

Dr. Bender approached me one day and said, we're going to be running this state-of-the-art institute in Washington and we really need to have someone summarize it, because it will be a number of speakers over a number of days, and would you be willing to summarize it? And I said, David, no problem, certainly; and I promptly began to write my summary. So I had it all written based on what I knew the topic was going to be. And I've sat here most of the last couple of days and I've rewritten the summary constantly based on the speakers each day.

Certainly after hearing "The Future" this morning, I'm thinking that this may the time for a career change.

For me having been at Disclosure all these years, having been involved in the middle of the information revolution (that I thought was over), being told that the revolution I thought was over is nowhere near being over, looking at the calendar seeing my age at this point, thinking I could retire in another two years, finding out that there's no way that's going to happen, and on top of it, that we're going to be stuck with all this paper, quite frankly, I'm out looking for a job in a different industry. Some of you may want to talk to me about opportunities elsewhere.

I think the best way to summarize this would probably

be from what we just heard today on back to the beginning, which is not the way I planned to do it to begin with. But I think that certainly the comments made about the future this morning really sparked a whole lot of thought. I was watching expressions around the room as certain statistics were thrown up there that we all assume are accurate.

And the thing that I've found over the years is: you put a statistic up on an overhead and the assumption is, it's true. No one in the room raised his hand and questioned any of those numbers, mainly because we're all doing what we do on a regular basis and no one here had the guts to question him. But you assume that those statistics are true, especially when you see a graph and when you see charts and numbers.

I will also assume that they are true. Mainly, because I learned a long time ago that you don't argue with someone who you believe has all the answers as it relates to the area of expertise. I got a distinct impression that he does this a lot. So I'm not going to argue with the statistics. The statistics to me were amazing. And I think for many of you they were also amazing.

And that really brings into very sharp focus the theme of the conference. I think the title is appropriate actually. I think the problem was we didn't have a question mark after it. See, that's why a number of people took offense. It was like an assumption that the use of electronic

information systems was, in effect, going to someway curtail the flow of information to the public in this country. And I think, really, it needs a question mark, because I think that there are a lot of reasons that we should be concerned. And quite honestly, we heard a lot of reasons why we should be concerned.

Some of the things somewhat frightened me. Whenever I start to hear about Social Security numbers and databases and somebody somewhere is going to push a button and everything there ever was to know about any of us is going to be on somebody's computer screen, that gets a little frightening. And in fact, just a little reference to an article. I'm very aware of the copyright laws, so I didn't copy it.

This week's BUSINESS WEEK in the information processing section has an article titled "Electronic Data Could Make Trouble for the Law." And actually, you could have just sent this out and we didn't have to meet here for three days because this article covers slightly almost everything we discussed here, and the concerns that all of us have about the government being in the information business, distributing information, and how that's going to affect our future access to the information.

One of the things that I decided to do after I saw the first day come to a close was take a good look. The first day we heard a lot about electronic information systems. And

there's a lot of language that I've observed come into the vernacular over the last couple of years, being in the information business. And electronic information systems -- I mean, I have a 10-year old son and he uses that language to me. "Dad, we worked on the electronic information system at school today." He's 10 years old and he's working on an Apple computer and he uses that language.

And I assumed that I knew what that was. Well, I decided to do what you should do when you maybe have a feeling that you don't. I went to a dictionary, and I got an interesting definition. Electronic, we all should know, is something that is produced by the action of electrons. I love those definitions. This is the NEW WEBSTER'S DICTIONARY.

A system is a set of facts, rules, et cetera, arranged in a regular, orderly form so as to show a logical plan linking the various parts. It made sense to me.

Then we get into information, and of course, that's your business: that's my business. Now that's gotten some strange definitions in the past couple of years. And certainly as a result of what we experienced here, I think our definition of information may change.

The first definition, the number one definition -- and actually it is like two paragraphs of definitions. The number one definition is, "knowledge acquired in any manner." I think that's a pretty good definition. The number two

definition, which was strange to me, was "something told."

But it was the number six definition that really brought it into perspective for me: "any data that can be stored in and retrieved from a computer." Now it's fascinating that the dictionary is already through the revolution. I mean, the definition of "information", that someone goes to a dictionary now and looks up -- the Webster's latest edition -- looks up the word "information", they're already going to see, very straightforward, "any data that can be stored in and retrieved from a computer."

So of course, now we know that the justification for the conference was real. And quite honestly, I think that we should applaud SLA for taking the time and the effort to put this institute together.

Over the years of selling information to libraries, I've seen an enormous change in the way information has been purchased, because we started out selling microfiche copies and paper copies, and now we're out there peddling compact disks, whatever those things are. And then tomorrow we're talking about fiber optic networks and laser transmissions, whatever that's all about. Then of course, Snyder tells us this morning that it's all going to stay paper and I've got a $17 million investment in a laser disk system.

But the fact of the matter is -- I'm going to go back and change my strategic plan. Get those printers back,

get the programmers out and bring them back in 30 years. The fact of the matter is that -- I'll call it the old days -- in the old days when I used to visit libraries and I observed -- I was a salesman at that point and basically making my entire living from convincing librarians to fill their rooms full of microfiche which was state-of-the-art in 1973.

The one thing that I noticed was basically most librarians were passive and that when I walked into certain libraries I would say, are you having a good day? And certain librarians would say, God, it's a horrible day; the phone doesn't stop ringing.

And then I'd walk up the street -- I was living in New York and my beat was Wall Street -- so I'd go to another brokerage firm and I'd walk into a library that looked, smelled, and sounded a lot like the first one. I mean, when you go from the Merrill Lynch library to the Solomon Brothers library, the Goldman Sachs library, the Morgan Guaranty library, they all look and sound and smell a lot alike. Except I'd walk in there and I'd say, are you having a great day. And they'd say, what a great day; the phone doesn't stop ringing. Interesting perspective.

And that's really the challenge, by the way, of this meeting the last couple of days. I think everything that we've heard focused on the fact that your roles in the society are changing. The people who used to be served by your

libraries, whom you had collected information for, always had to come through that central source because in the early days you were records managers. You basically had the knowledge of the organization in your room -- and those rooms have gotten bigger and bigger.

That's interesting to me, because as we've computerized more, the libraries have gotten bigger. It's astonishing to see this as I travel around the country. I thought between the microfiche and the floppy disks and the compact disks the library of the future would be like a four-by-five room. And most of the new libraries that have been built are larger libraries, not smaller libraries, certainly on the business side, business libraries. And even some of the public libraries, I don't see them shrinking; or even the university libraries. So obviously paper is alive and well.

But the key now is, and it was brought out beautifully by a number of speakers the last couple of days, is that government is now taking -- because it is the major repository of information in this country -- a major role in the delivery of the information.

When Disclosure got the SEC contract back in 1968, basically the SEC was getting six million pieces of paper every year. We used to drive the trucks down, pick up the paper, truck it out to our facility in Bethesda, convert it to

microfiche, shred the paper, and throw it away. People who wanted access to the information came to us as the contractor; we got the information in-house; we had it organized; we had it indexed, and we sent copies out.

Now you have the government, in the case of the SEC, in the case of PTO and a number of other agencies that we heard presentations on, basically stating that if the information comes in electronically, then in fact, the government is in a position to deliver it out. And obviously, one of the big battles that the industry association is fighting, and we heard that from Ken, is at what point does that fine line get drawn? At what point does the government end up in the business?

Now certainly in our company we think the fine line is at the value add. The problem is you cannot find any two people to agree at what the value add means. If you just take all the information and you put into a databank and you let the information flow out by company name, in the case of the SEC data file which I'm obviously familiar with, is that a value add?

Well, you could argue it's not because if I wanted a copy of an SEC filing I would call, mention the company name and I would get a paper copy or microfilm copy. Then as you start to add additional software to these electronic databases that the government is moving rapidly on, you begin to start

to look at who's deciding what those programs should be.

The reason I brought up the question about where does GAO get involved was because the thing that I find curious is that the agencies are moving ahead, when in fact the government has yet to define a lot of the major issues that relate to the government's ability to move ahead. And in all honesty, I can say that at a Congressional hearing, as I have already, and it doesn't mean a thing, because I'm Steve Goldspiel, executive vice president for a former SEC contractor.

On the other hand, you could all get active -- the challenge that Mr. Snyder put out this morning. I'm going to lay out another challenge. Just what you needed, homework. So I'm going to give you another assignment.

Those of you who decide after this to stay in the profession really need to think about how you can make a difference. Because I'll tell you something. With what I know living here now and observing what's happened with the EDGAR project, which has cost the taxpayers a fortune and they still have no bidder on, and I do not believe, that they will get a bidder, because they're on the wrong topic in that dissemination program.

You people are the ones who have to make the difference in terms of the government policy. Because if you don't, as we've seen already, they'll make it without you.

Now one day last spring we invited a number of our major clients from around the country to come to Washington for a full day of lobbying on Capitol Hill, which was amazing for me because I'd never participated in that. And in fact, we lobbied Congressman English and Congressman Dingell, two of the people in the House who are very active in overseeing this whole question of government information collection.

And I will tell you that going in I didn't believe that it mattered at all. We ended up with 25 people, and we were driving around town in vans, and we were waiting in offices to speak with people. They gave us 15 minutes, you know, pushed us out in the hall, gave us another 15 minutes. We organized into four-people groups and everything. You know, we made a major difference. We absolutely made a difference. You can make a difference.

The challenge of this conference is to get you to the point where you care enough to make that difference. Or as we heard earlier, you just go back to your offices. And I know the pink messages -- the staff from SLA have been laughing because every time I've come here I've been at the phone with a handful of pink messages. And they were right; I did bring the messages from the office, because if I sat down to start returning those phone calls I never would have gotten out of the office.

That's what's going to happen when you go back from

here. You're going to get into your office and, in fact, you're going to have a lot of pink messages; you're going to have a whole bunch of projects that didn't get moved where you thought they would and you're going to forget about this.

I urge you not to do that. I know intimately what is going on in this city as it relates to the dissemination of information that you and your patrons hold so dear. These people are moving forward. They're going full-speed ahead. Four years later GAO will come in and go, whoops -- four years later. If the information as it related to that project had been gathered a year before the project was created, they never would have had the problem. The SEC's got that problem. It appears that the Maritime Commission does not because they did their homework.

The SEC's problem, by the way -- you'll be interested in this -- the real problem at the Commission is that no one wants to be the contractor. Everybody wants to be the customer of the contractor, because under the statutes the contractor could not prohibit the flow of that information that they gathered.

So why should I spend $35 -- $70 million. It started out as $75, now it's $35. Why should we spend that money to do the job for the government, when in fact somebody else could do that and I could buy that data on tape every morning for under $100,000 a year? Why get involved in $35 --

and they can't price it at $35 million for one tape. They get into the reasonable pricing.

That is the dilemma that the SEC has, and I think that's a dilemma -- that's a major problem for the project and other projects here in town because nobody did the homework beforehand. And that's why you people need to get involved now.

You've learned enough in the last couple of days to have the facts on what's going on at the different agencies. You saw presentations in the various subgroups from different agencies. I mean, were any of you amazed at what's been going on? I mean, how many of you were absolutely amazed at how far some of them have gotten?

Let's talk a little bit about keeping citizens uninformed because this was a presentation that I found somewhat fascinating. You see, the double-edged sword here is that the statements that we heard are exactly true. And that is, that the technology should increase the availability of the information, assuming everybody has a PC at home.

No, the fact of the matter is, it makes a whole lot of sense for the SEC not to get paper copies of every filing. It makes a whole lot of sense for the IRS not to get paper copies of every filing. And you can bet -- hopefully not in our lifetime, but at some point the IRS will no longer get paper copies.

People will either send it in on their own computer -- I mean, I don't know about you but my accountant does my tax return on a computer. And that floppy disk could easily hold the information -- holds the information that could easily be transmitted down a phone line into the IRS computer. And what will happen down the road, as is happening in the EDGAR pilot now, is there are some people who will not have those computers and they will go to a conversion site -- H&R Block possibly. And basically, they will go in there and Block will do the conversion. But it's definitely got to go in electronically.

The SEC filings are definitely going to go in electronically. The Patent Office project will absolutely go the way it's going -- $300 and some-odd million later. I don't think there's anybody at the Library of Congress who doesn't believe that the Library will more and more depend upon the kind of automation that we've heard about, talked about, and some of us have actually seen.

So I think we need to think about the premise and some of the people who spoke in terms of why this information may be disappearing. The other thing you all need to do is speak up for the information that you deem important. Because I think one of the things that I got out of one of the talks -- and this was Donna's talk earlier on keeping citizens uninformed -- was that the people who are making those

decisions on getting rid of the "bedbug book". Basically they made that decision because somebody said, you've got to cut 25 publications, and the criteria that they used were not necessarily the criteria that information professionals would use.

And we heard a little bit about that in terms of, if that information is available to a reporter and a reporter writes a story based on that information and that paper gets read by hundreds of thousands or millions of people or ends up on the evening news, to just count it as one is ludicrous. There are people in this town that count it as one. Trust me, I've met them. I've stood in their offices. They won't come to our office, but I've stood in their office.

The area that we're going to focus on in the next five years in this problem relates to the legal side of the automation of the government information data. There are a lot of questions that were raised.

And one which I never even thought about that in terms of the integrity and security of correspondence over electronic mail. I mean, how many of you knew that was an issue? I always thought if I sent anything electronic mail, it was secure. But of course, you see a movie like "WarGames" and all of a sudden you realize, how secure can it be?

The legal aspects are going to be challenged. Dingell's committee on the Hill is focusing very heavily on

that whole issue of the legal changes that need to be made in order for the government to be able to disseminate its information electronically. Again, I go back to the fact that because you all have not been involved until this point on the policy making side, they're just moving straight ahead. They are further ahead than anybody in this room thinks -- absolutely further ahead. Not only in what they've implemented, but in what they continue to put on the drawing boards.

And the taxpayer side, the expense side of it, even with Gramm-Rudman -- I mean, the SEC -- interesting, the SEC in effect makes more money than its budgeted amount because they collect fees. When a company files with the Commission, they pay a fee. Those fees get returned to the Treasury. So what the SEC is saying now is, we want most of it back. Yes, you used to get this surplus, but now we want to spend those fees and this is the way we want to spend it. Those fees that went into the Treasury used to get spread into all the other agencies as general funds.

So that's the kind of mentality. There are other agencies that collect fees in this town that are getting ready to go into electronic distribution. And I do believe it all makes sense. I'd be an idiot to stand up here and say that -- especially with our databases and all this other stuff we're doing, that it doesn't make sense to put this information in

electronic form.

And I do believe that the government's role will be, whether we like it or not, to do that; because the government collects this information. You know, the census data is collected by the Census Department. I don't see anybody going around town knocking on doors, other than the Census Department, saying I want to assess the population change and shift in this area. How old is the male? How old the female? How many children and so on.

Unlike Federal Express who had the guts, seeing the government operate in a certain business, and created a whole business, if not an industry, around that opportunity. That's not going to happen in the information business. Disclosure, Standard & Poors, Dow Jones, Dunn & Bradstreet, we're not going to get companies to file with our company instead of the SEC. They have a legal mandate to file with the SEC.

When you talk about the National Institute of Health, when you talk about things like Cancer-line, that information is going to be collected there. It continues to be collected. It will probably always be collected there. So that's why the focus needs to be on the collection side and the legal aspects in terms of how will you get access to that.

There is no doubt that private industry, private information industry that I represent, will continue to do the value add. But we're not going to collect the information.

And you need to remember that as you think about where you should get involved.

And I will tell you, because I know you're from all over the country, your ability to get involved starts on a local basis with your local representatives to the House and to the Senate. Get a bunch of professional librarians in your area together and pay a visit to a congressman and tell him or her what your concerns are.

There was an interesting discussion about the value of information. I found that fascinating. There was a statement made that clearly PTO undervalued its information and clearly the SEC overvalued their information. Says who? I mean, do you go to an information appraiser like when you have a diamond appraised?

You're the only ones who can do that because you're speaking to the users. Don't let somebody else evaluate the information. They're spending your money on the programs. I mean, I told you the Patent Office is $300 million. The SEC projects -- they've spent 20 already, $20 million in the pilot. There's another $70 million for the first five years of the project once they get it going.

Don't let somebody else value the information that you hold so dear. If you don't speak up for it, they're going to value it as nothing; it will disappear. I mean, that bedbug example is a perfect example. I'm sure there were

people who cared about that piece of literature. They never spoke up for it, so it left.

There are people in this town as a result of this Administration, and probably they'll be here for the next two or three, whether it's Republican or Democratic, that absolutely are given orders to make cuts for all the right reasons; but they don't have the ability to discern which cuts make sense. They cut dollars.

I would like to believe that when you all get budget cuts you don't just cut dollars. You look at the services that provide the most value to your patrons and you cut based on that. The government doesn't work that way, because how do they know unless you tell them? This is really important. I have all your phone numbers. I'm going to be following up to you guys over the next six months to make sure you did some of your homework here.

Technology is neutral. I don't understand that. I want somebody to explain that to me. We've heard that four or five times. I would like someone, seriously, to explain that to me; someone who understands it. If nobody stands up, I'm going to know you ll didn't understand it but nobody had the guts to say it. So I'll say it, I don't understand what "technology is neutral" is.

And it was said, technology is neutral like money. I don't know what that means. What do you mean, money is

neutral. I heard money is power. Now they're telling me money is neutral. What does that mean, technology is neutral?

QUESTION FROM THE FLOOR: It's neither good nor bad.

MR. GOLDSPIEL: It's neither good nor bad. So there's no bad technology.

QUESTION FROM THE FLOOR: It's only the people who make it bad.

MR. GOLDSPIEL: Okay, that's good.

QUESTION FROM THE FLOOR: Technology is simply a means to the end. It's a delivery system.

MR. GOLDSPIEL: Okay.

QUESTION FROM THE FLOOR: That's the NRA's argument, guns don't kill people; people kill people.

MR. GOLDSPIEL: Right. Thank you very much. So what we're saying is technology in the wrong hands can be dangerous, and you should think about that.

I was concerned hearing technology is neutral because it seemed to be, technology is neutral; therefore, we need not worry about it. I think we need to worry about it. The same way we need to worry about Star Wars and all that other stuff. I mean, I don't think that technology is neutral.

Let's see, government information. That was an interesting question; there's no such thing as government information. How many of you agree with that?

I'm curious how you feel about that

statement: there's no such thing as government information. No comment? I mean, is that true, that there's no such thing as government information?

QUESTION FROM THE FLOOR: Well, the person explained it as that there are government products; there are government markets, and so forth but there is no generic government information.

QUESTION FROM THE FLOOR: But I don't think that's true because there's a lot of information that nobody could collect because they couldn't get a mandate -- could not require people to report it without the federal government.

MR. GOLDSPIEL: That is exactly what my thought was on that. That in fact, because of the government's unique position to gain that information because they can mandate it, they can legislate it; I think there's government information.

QUESTION FROM THE FLOOR: And not only that, the government has a responsibility to provide information about its policies and programs, which most certain is government information.

MR. GOLDSPIEL: Absolutely. When a subcommittee reports on what it's doing --

QUESTION FROM THE FLOOR: And executive agencies, what their policies are and how they're being carried out. And that's one way that we as citizens hold our government accountable for its actions and how it spends our money. It's

that kind of information that most certainly is essential for an informed electorate, and it is information about the government and it is government information.

QUESTION FROM THE FLOOR: Maybe that person didn't read definition number six.

MR. GOLDSPIEL: I think the key here is that there are a lot of words that we heard and a lot of sentences over the past couple of days, and a lot of us for one reason or another -- you know, one meeting too many, or it's late in the day -- didn't challenge a lot of it. And I just want to make sure that you don't go home taking it all as the Gospel.

There are a lot of statements that were made for a number of reasons, and it's critical that we take that into consideration as we assimilate what we heard and decide to act upon it. Because we're all going to act upon it, right? I'd like to see an agreement here that we're all going to do something as a result of spending three and-a-half days here.

I'm going to close discussing Mel Day's talk, which focused on this whole question of national information policy. And it was interesting to hear Mr. DeSanti's comment, which I believe by the way, that it will be extremely difficult to do that because the people that need to do it are never here long enough, because they only hang around like 18 months or two years. And somehow, the feeling is that national information policy is going to take 10 years. I mean, that's the

impression. I'm not saying it's going to take 10 days, but it's interesting that that's the perspective we hear.

How many of you think, just for a slight survey here...I won't record it in the minutes...I won't say the number...how many of you think a national information policy as we heard it somewhat defined is a good idea?

[Show of hands.]

MR. GOLDSPIEL: And how many of you think it's not a good idea?

[Show of hands.]

MR. GOLDSPIEL: So we're outnumbered. Did you have a comment?

QUESTION FROM THE FLOOR: I'd just like to say, I don't think that there can be a national information policy. There have to be several for different reasons.

MR. GOLDSPIEL: I think I would agree with that. I would agree with that.

QUESTION FROM THE FLOOR: I mean, policies for example emanating from the State Department regarding information are quite different from those emanating from the Department of Commerce or from other agencies.

So I said I was not in favor of an information policy, but my reason is, I think that we need several, not one.

MR. GOLDSPIEL: I think that's a good idea.

QUESTION FROM THE FLOOR: Yes, even though this is not a discussion period. I disagree; I think that's a problem with looking at what national information now is. Everybody's going its own direction in developing its own program without any coordination with each other or other departments or whatever. And I think until we have an overall focus of what's happening, a national information policy is essential.

It might have different components. It would affect all the different agencies, different departments, different branches of government and so on, but it has to be a coordinated effort and stop being piecemeal together as it currently is being done.

MR. GOLDSPIEL: That is absolutely true in my opinion. And in fact, I have a real good example of that hodgepodge approach. The SEC again, which is the project that I've been involved with for so long, when they came in with the pilot project, which was the corporations would file electronically with the Commission. They would no longer send a paper copy of an annual report or a quarterly report.

In order to induce the 150 corporations to do it -- and they never got more than 150 to do it. They were supposed to have over 2,000 as of last September.

They told them that if they sent it in electronically, they no longer had to send it in paper copy. So for that group of companies they did away with that

requirement in a pilot. And we have been putting a lot of pressure on a number of people to make sure that if it goes forward, until the marketplace accepts EDGAR or whatever it's going to be called as the way in which this kind of information, which again, I think we all know is extremely important in terms of the national economy. A lot of decisions are made, business decisions are made, mergers, acquisitions, securities, purchases, on that information.

Until the library community who are responsible for like 98 percent of the dissemination of SEC related material stamp off on the fact, by their own use of the system that is in fact acceptable, then they have to keep the other thing going. You cannot bring in the new technology, kill the old as an inducement to get people to the new.

It was interesting. I asked the SEC why they did that and the answer I got from one of the people there at a meeting -- this was about two and-a-half years ago -- was that if we let them file the paper, then our staff wouldn't use the computers. Isn't that fascinating? If we let them file the paper, the staff wouldn't use the computers, and we need the staff to use the computers. Clearly, the staff would have preferred to use the paper.

The Commission has a burgeoning problem like a lot of the other agencies. More and more paper coming in, their staff budgets are cut, they don't have people to review the

information. The same at the Maritime Commission, same at PTO, so they want the computer to do all that. And by the way, the public will get their information as a side benefit of that.

So I'm finished summarizing and proselytizing and everything else. I really do encourage you -- I mean, we had a very, very, good experience getting involved, certainly on an issue that's important to us as well as to the special librarians that use information filed at the SEC.

There are other agencies whose information is very near and dear to your daily operations, and you need to find out what's going on here because I will tell you: there's a lot going on in this town as it relates to that information. And if you don't get involved, you're going to wake up one morning and you're going to find another contractor in there and your access to the information won't be blocked, but it will be different.

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